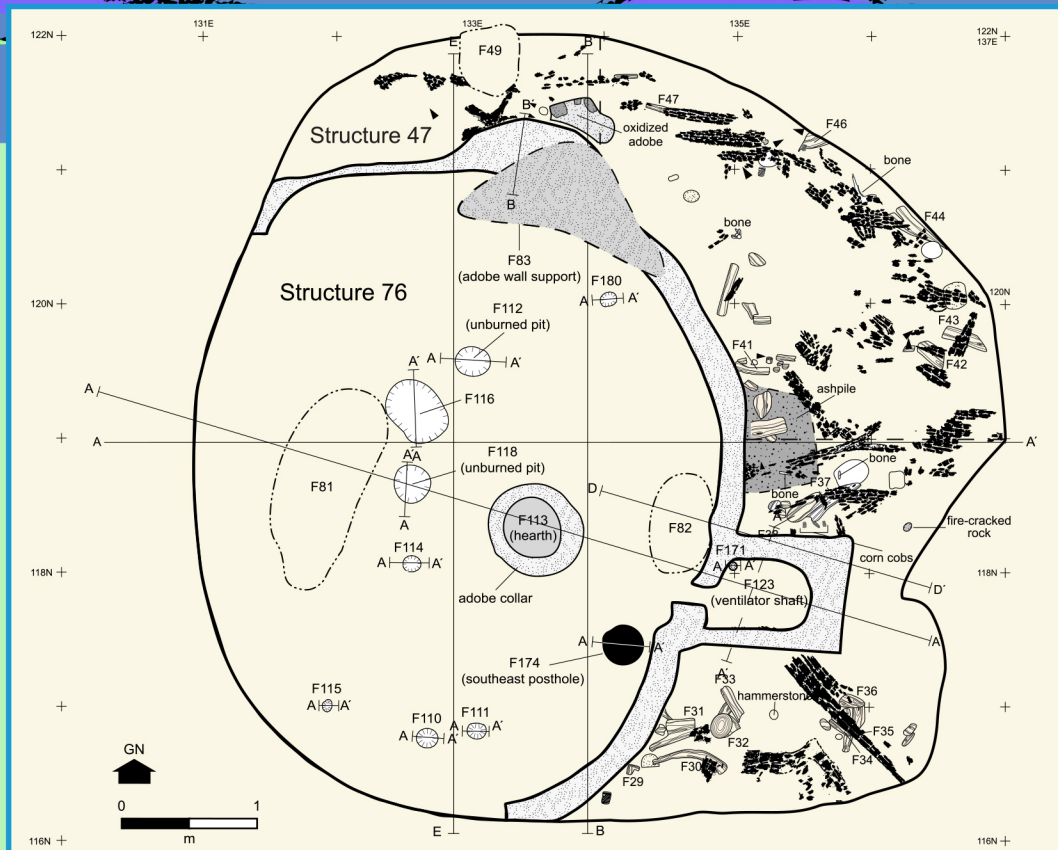


# EXCAVATIONS ALONG NM 22: AGRICULTURAL ADAPTATION FROM AD 500 TO 1900 IN THE NORTHERN SANTO DOMINGO BASIN, SANDOVAL COUNTY, NEW MEXICO

compiled by Stephen S. Post and Richard C. Chapman

## VOLUME 2 MAJOR SITE EXCAVATIONS AT LA 265 AND LA 6169

Richard C. Chapman, J. Mark Sheppard, Stephen S. Post





OFFICE OF ARCHAEOLOGICAL STUDIES

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DEPARTMENT OF CULTURAL AFFAIRS

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Archaeology Notes 385

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Santa Fe

2012

New Mexico



# CONTENTS

Chapter 11. LA 265 by Richard Chapman and John Mark Sheppard . . . .	1
Chapter 12. LA 6169 by Stephen S. Post . . . . .	135

## FIGURES

11.1. LA 265 in relation to NM 22 . . . . .	2
11.2. LA 265 Study Unit locations . . . . .	5
11.3. Structure 1, pithouse, plan view and profile . . . . .	6
11.4. Structure 1, pithouse stratigraphy . . . . .	14
11.5. Dog burial in fill of Study Unit 1, pithouse . . . . .	15
11.6. Structure 1, pithouse, after excavation . . . . .	16
11.7. Hearth, Feature 102 . . . . .	17
11.8. Possible foot drum, Feature 107 . . . . .	18
11.9. Possible foot drum, Feature 108 . . . . .	19
11.10. Possible foot drum, Feature 109 . . . . .	19
11.11. Study Unit 2, plan view . . . . .	31
11.12. Study Unit 2, Structure 27, plan and profile . . . . .	39
11.13. Study Unit 2, Structure 27, showing burned rock in fill . . . . .	40
11.14. Study Unit 2, Structure 27, after excavation . . . . .	40
11.15. Study Unit 2, Structure 33, plan and profile . . . . .	41
11.16. Study Unit 2, Feature 1 . . . . .	43
11.17. Study Unit 3, feature distribution . . . . .	60
11.18. Study Unit 3, Feature 3, pit complex . . . . .	61
11.19. Study Unit 3, profiles of Features 14 and 34 . . . . .	62
11.20. Study Unit 3, Feature 14 stratigraphy . . . . .	63
11.21. Study Unit 3, Feature 15 profile . . . . .	68
11.22. Study Unit 3, turkey burial, Feature 19 in Feature 15, pit . . . . .	69
11.23. Study Unit 3, Features 10 and 12, profile and plan view . . . . .	76
11.24. Study Unit 4, Structure 4, pithouse, after excavation . . . . .	83
11.25. Study Unit 4, Structure 4, pithouse, plan view and profile . . . . .	84
11.26. Study Unit 4, Structure 4, pithouse, stratigraphy . . . . .	85
11.27. Study Unit 4, Structure 4, pithouse, central hearth complex . . . . .	88
11.28. Study Unit 4, Structure 4, thermal features 74 and 95, plans and profiles . . . . .	89
11.29. Study Unit 4, Structure 4, thermal feature 74 during excavation . . . . .	89
11.30. Study Unit 4, Structure 4, pit features 86 and 87, plans and profiles . . . . .	90
11.31. Study Unit 4, Structure 4, pit features 73, 76, and 100, plans and profiles . . . . .	90
11.32. Study Unit 4, Structure 4, primary roof support postholes, plans and profiles . . . . .	91
11.33. Study Unit 4, Structure 4, posthole features 84 and 85, plans and profiles . . . . .	92
11.34. Study Unit 9, reused ventilator shafts associated with Study Unit 4 pithouse . . . . .	93
11.35. Distribution of features in Area 2, within vicinity of Structure 13 . . . . .	100
11.36. Structure 13, pithouse after excavation . . . . .	112
11.37. Structure 13, pithouse, stratigraphy profile . . . . .	113
11.38. Structure 13, pithouse, stratigraphy profile . . . . .	114

11.39. Structure 13, pithouse plan view	.115
11.40. Structure 13, Feature 55, dog burial in structure fill	.116
11.41. Study Unit 14, Feature 56, plan view and profile	.125
11.42. Study Unit 14, Features 156 and 158, plan view and profile	.126
11.43. Study Unit 14, Feature 61, plan view and profile	.127
12.1. Map of LA 6169, after Marshall	.136
12.2. LA 6169, Area 1, excavation map	.137
12.3. LA 6169, Area 2, excavation map	.138
12.4. LA 6169, Area 1, Backhoe Trench 1, profile	.140
12.5. LA 6169, Area 1, Backhoe Trench 2, profile	.141
12.6. LA 6169, Structure 4, southwest-southeast quadrants	.147
12.7. LA 6169, Structure 4, stratigraphic profile, south and west walls	.148
12.8. LA 6169, Structure 4 and 15, plan view	.154
12.9. LA 6169, Structure 4 and 15, profile	.155
12.10. LA 6169, Structure 4, structure overview	.156
12.11. LA 6169, Structure 4, cobbles on the pithouse floor	.156
12.12. LA 6169, Structure 4, Features 28, 30--33, 37--41, plan and profile	.160
12.13. LA 6169, Structure 4, Feature 41, excavation	.161
12.14. LA 6169, Structure 4, Feature 42, excavation	.161
12.15. LA 6169, Structure 4, Features 42, 43, 44, 45, 48, 59, and 73, plan and profile	.162
12.16. LA 6169, Structure 4, Feature 35 and 36, central hearth, plan and profile	.163
12.17. LA 6169, Structure 4, Feature 35, central hearth	.164
12.18. LA 6169, Structure 4, Feature 66, plan and profile	.165
12.19. LA 6169, Structure 4, Feature 66, ventilator tunnel with antler embedded in the fill	.166
12.20. LA 6169, Structure 4, Feature 13, plan view	.167
12.21. LA 6169, Structure 47, plan view	.176
12.22. LA 6169, Structures 47 and 76, profiles	.177
12.23. LA 6169, Structure 47, excavation in progress	.178
12.24. LA 6169, Structure 47, excavation in progress	.179
12.25. LA 6169, Structures 47 and 76, stratigraphic profiles	.180
12.26. LA 6169, Structure 47, Trench 120N, profile	.181
12.27. LA 6169, Structure 47, after excavation	.183
12.28. LA 6169, Structures 47 and 76, excavation	.183
12.29. LA 6169, Structure 47, plan showing burned beam locations	.185
12.30. LA 6169, Structure 47, showing exposed burned beams in floor and roof fall	.186
12.31. LA 6169, Structure 47, Features 152 and 161, plan and profile	.191
12.32. LA 6169, Structure 47, Feature 161, excavation	.191
12.33. LA 6169, Structure 47, Features 163, 164, 165, and 166, plan and profile	.192
12.34. LA 6169, Structure 47, Feature 165, excavation	.193
12.35. LA 6169, Structure 47, Features 169, 175, 176, 177, 178, 179, 182, profiles	.194
12.36. LA 6169, Structure 47, Features 183, 184, 185, profiles	.195
12.37. LA 6169, Structure 47, Feature 160, plan and profile	.195
12.38. LA 6169, Structure 47, Feature 163, excavation	.196
12.39. LA 6169, Structure 47, Feature 119, plan and profile	.196
12.40. LA 6169, Structure 47, Feature 119, excavation	.197
12.41. LA 6169, Structure 47, Feature 121, plan and profile	.198
12.42. LA 6169, Structure 47, Feature 121, excavation	.198
12.43. LA 6169, Structure 47, Features 152 and 162, plan and profiles	.199
12.44. LA 6169, Structure 47, Features 152 and 162, excavation	.200

12.45. LA 6169, Structure 76, excavation	205
12.46. LA 6169, Structure 76, floor plan	206
12.47. LA 6169, Structure 76, Features 171, 174, 180, profiles	214
12.48. LA 6169, Structure 76, Features 83, 110, 111, 112, 114, 115, 116, 118, 123, profiles	215
12.49. LA 6169, Structure 76, Feature 113, central hearth, plan and profile	216
12.50. LA 6169, Structure 76, Features 113 and 123, excavation	217
12.51. LA 6169, Structure 10, profile of the 73 North line from 84.50 to 87.50E	224
12.52. LA 6169, Structure 10, plan and profile	227
12.53. LA 6169, Structure 10, excavation	228
12.54. LA 6169, Structure 10, Feature 17, plan and profile	229
12.55. LA 6169, Feature 18, excavation	230
12.56. LA 6169, Structure 15, plan and stratigraphic profile	235
12.57. LA 6169, Structure 15, excavation	238
12.58. LA 6169, Structure 15, Feature 72, plan and profile	240
12.59. LA 6169, Structure 15, Feature 72, excavation	240
12.60. LA 6169, Structure 15, Feature 94, plan and profile	241
12.61. LA 6169, Structure 15, Feature 94, excavation	241
12.62. LA 6169, Structure 16, plan and profile	248
12.63. LA 6169, Structure 16, excavation	249
12.64. LA 6169, Structure 16, Features 102, 103, and 104, profiles	251
12.65. LA 6169, Structure 16, Features 102, 103, and 104, excavation	251
12.66. LA 6169, Structure 16, Features 105, 106, 107, 128, 130, plan and profile	253
12.67. LA 6169, Structure 16, Feature 105, excavation	254
12.68. LA 6169, Structure 16, Feature 129, ventilator tunnel and shaft, plan and profile	256
12.69. LA 6169, Structure 70, stratigraphic profile	261
12.70. LA 6169, Structure 70, plan and profile	263
12.71. LA 6169, Structure 70, excavation	264
12.72. LA 6169, Structure 70, Feature 98, 99, 100, 101, 122, 125, plan and profile	267
12.73. LA 6169, Structure 70, Feature 97, plan and profile	268
12.74. LA 6169, Structure 12, plan and profile	272
12.75. LA 6169, Structure 12, excavation	273
12.76. LA 6169, Study Unit 1, Feature 29, plan and profile	277
12.77. LA 6169, Study Unit 1, Feature 29, excavation	277
12.78. LA 6169, Study Unit 1, Feature 69, plan and profile	279
12.79. LA 6169, Study Unit 6, Features 134, 146, and 149, plan and profile	285
12.80. LA 6169, Study Unit 6, Feature 134, excavation	286
12.81. LA 6169, Study Unit 6, Feature 9, plan and profile	288
12.82. LA 6169, Study Unit 6, Features 6, 51, 55, 77, 78, plan and profile	289
12.83. LA 6169, Study Unit 6, Features 79, 84, 88, 93, 96, plan and profile	290
12.84. LA 6169, Study Unit 6, Feature 79, excavation	291
12.85. LA 6169, Study Unit 6, Feature 84, excavation	291
12.86. LA 6169, Study Unit 6, Feature 88, excavation	292
12.87. LA 6169, Study Unit 6, Feature 149, excavation	293
12.88. LA 6169, Study Unit 7, Feature 147, 156, 157, plan and profile	294
12.89. LA 6169, Study Unit 8, Features 151 and 155, plan and profile	295
12.90. LA 6169, Study Unit 8, Features 86, 89, 90, 92, 145, 148, plan and profile	296
12.91. LA 6169, Study Unit 9, Features 91, 126, 127, plan and profile	299
12.92. LA 6169, Study Unit 11, Features 57, 60, 64, 124, plan and profile	303
12.93. LA 6169, Study Unit 12, Feature 138, plan	308

12.94. LA 6169, Study Unit 12, Features 135, 136, 137, 141, 142, 143, plan and profiles . . . .	309
12.95. LA 6169, Study Unit 13, Feature 50, plan and profile . . . . .	311

*TABLES*

11.1. LA 265, surface artifact collection . . . . .	1
11.2. LA 265, SU 1, Structure 1, intramural features . . . . .	8
11.3. LA 265, SU 1, Structure 1, ceramic type distribution . . . . .	21
11.4. LA 265, SU 1, Structure 1, vessel form distribution . . . . .	22
11.5. LA 265, Structure 1, upper fill, lithic artifact type by material group . . . . .	23
11.6. LA 265, Structure 1, roof fall, lithic artifact type by material group . . . . .	24
11.7. LA 265, Structure 1, floor contact, lithic artifact type by material group . . . . .	25
11.8. LA 265, Structure 1, all floor features, lithic artifact type by material group . . . . .	26
11.9. LA 265, summary of fauna from SU 1, Structure 1, fill and floor contact . . . . .	27
11.10. LA 265, summary of fauna from SU 1, Structure 1, floor features . . . . .	29
11.11. LA 265, Study Unit 2, feature data . . . . .	33
11.12. LA 265, SU 2, features, ceramic distribution . . . . .	48
11.13. LA 265, SU 2, lithic assemblage in human burial . . . . .	49
11.14. LA 265, SU 2, ventilator to Structure 1, lithic assemblage . . . . .	49
11.15. LA 265, SU 2, keyhole structures and internal features, lithic assemblage . . . . .	50
11.16. LA 265, SU 2, large bell-shaped pits, lithic assemblage . . . . .	51
11.17. LA 265, SU 2, buried hearths, lithic assemblage . . . . .	52
11.18. LA 265, SU 2, all other extramural features, lithic assemblage . . . . .	52
11.19. LA 265, fauna recovered from keyhole structures and intramural features . . . . .	53
11.20. LA 265, summary of fauna from the SU 2 large bell-shaped pits . . . . .	54
11.21. LA 265, summary of fauna from other SU 2 features . . . . .	55
11.22. LA 265, SU 3, Feature 3, upper ash fill, lithic artifact type by material group . . . . .	59
11.23. LA 265, SU 3, Feature 14, lithic artifact type by material group . . . . .	64
11.24. LA 265, SU 3, large and small pits, ceramic distribution . . . . .	64
11.25. LA 265, SU 3, extramural feature ceramics . . . . .	65
11.26. LA 265, summary of fauna from SU3 . . . . .	66
11.27. LA 265, SU3, Feature 15, lithic artifact type by material group . . . . .	69
11.28. LA 265, SU 3, Feature 35, lithic artifact type by material group . . . . .	73
11.29. LA 265, SU 3, Feature 7, lithic artifact type by material group . . . . .	73
11.30. LA 265, SU 3, ventilator shaft to unexcavated pithouse, lithic type by material group	77
11.31. LA 265, SU 3, small pits surrounding Feature 15, lithic artifact type by material group	80
11.32. LA 265, SU 3, hearths and roasting pits, lithic artifact type by material group . . . . .	80
11.33. LA 265, SU 3, all other features, lithic artifact type by material group . . . . .	80
11.34. LA 265, SU 4, ceramic type distribution . . . . .	94
11.35. LA 265, Structure 4, upper fill, lithic artifact type by material group . . . . .	94
11.36. LA 265, Structure 4, roof fall, lithic artifact type by material group . . . . .	94
11.37. LA 265, Structure 4, floor contact, lithic artifact type by material group . . . . .	96
11.38. LA 265, Structure 4, floor features, lithic artifact type by material group . . . . .	96
11.39. LA 265, Structure 4, summary of fauna . . . . .	97
11.40. LA 265, Structure 4, summary of fauna from SU 4, features . . . . .	97
11.41. LA 265, Structure 4, vent tunnel and shafts, faunal summary . . . . .	98
11.42. LA 265, SU 3 and 9, ceramic type distributions . . . . .	104
11.43. LA 265, SU 9, 11, 12, and 14, ceramic type distributions . . . . .	104



11.44. LA 265, SU 9, Structure 4, ventilator shaft and tunnel lithic artifact types by material group .....	105
11.45. LA 265, SU 9, upper hearth, lithic artifact types by material group .....	105
11.46. LA 265, SU 9 all other features, artifact types by material group .....	105
11.47. LA 265, SU 9 features, fauna summary .....	106
11.48. LA 265, SU 11 and 12, summary of fauna .....	110
11.49. LA 265, SU 12, hearths and roasting pits, lithic artifact type by material group ....	110
11.50. LA 265, SU 12, all other features, lithic artifact type by material group .....	110
11.51. LA 265, Structure 13, ceramic type distribution .....	119
11.52. LA 265, Structure 13, upper fill, lithic artifact type by material group .....	119
11.53. LA 265, Structure 13, middle fill, lithic artifact type by material group .....	119
11.54. LA 265, Structure 13, roof fall, lithic artifact type by material group .....	120
11.55. LA 265, Structure 13, floor contact, lithic artifact type by material group .....	121
11.56. LA 265, Structure 13, ventilator shaft, lithic artifact type by material group .....	121
11.57. LA 265, Structure 13, human burial, lithic artifact type by material group .....	122
11.58. LA 265, Structure 13, floor features, lithic artifact type by material group .....	122
11.59. LA 265, Structure 13, floor features, fauna summary .....	122
11.60. LA 265, SU 14, possible structure with intramural features, lithic type by material group .....	130
11.61. LA 265, SU 14, small pits, lithic artifact type by material group .....	130
11.62. LA 265, summary of fauna from SU 14 .....	130
12.1. LA 6169, Structure 4 stratigraphic descriptions .....	150
12.2. LA 6169, distribution of ceramics from Early Developmental period Structures 4 and 47 .....	151
12.3. LA 6169, Structure 4, upper fill, lithic type by material group .....	152
12.4. LA 6169, Structure 4, roof fall and floor fill, lithic type by material group .....	153
12.5. LA 6169, features associated with Structure 4 .....	158
12.6. LA 6169, Structure 4, fauna summary .....	169
12.7. LA 6169, Structure 4, floor, lithic type by material group .....	172
12.8. LA 6169, Structure 47 stratigraphic descriptions .....	182
12.9. LA 6169, Structure 47, feature data .....	188
12.10. LA 6169, Summary of fauna, Structure 47 .....	190
12.11. LA 6169, Structure 47, lithic type by material group .....	201
12.12. LA 6169, Structure 76, stratigraphic descriptions .....	207
12.13. LA 6169, Structure 76, ceramic type distribution .....	208
12.14. LA 6169, Structure 76, lithic type by material group .....	210
12.15. LA 6169, Structure 76, fauna summary .....	211
12.16. LA 6169, Structure 76, feature data .....	213
12.17. LA 6169, Structure 76, floor features, seeds and fruits, frequency per liter .....	222
12.18. LA 6169, Structure 76, floor features, other plant parts, abundance .....	222
12.19. LA 6169, Structure 76, floor features, wood from flotation samples by weight .....	222
12.20. LA 6169, Structure 76, floor features, macrobotanical and C-14 samples .....	223
12.21. LA 6169, Coalition component ceramic distributions, Structures 10-11, 15-16, 70 ...	225
12.22. LA 6169, Structure 10, chipped and ground stone artifact type by material type ...	226
12.23. LA 6169, Structure 10, fauna summary .....	227
12.24. LA 6169, Structure 10, intramural feature descriptions .....	229
12.25. LA 6169, Structure 10, floor features, seeds and fruits .....	232
12.26. LA 6169, Structure 10, floor features, other plant parts, abundance .....	232
12.27. LA 6169, Structure 10, floor features, wood from flotation samples by weight .....	232

12.28. LA 6169, Structure 10, floor features, macrobotanical and C-14 samples	232
12.29. LA 6169, Structure 15, stratigraphic descriptions	234
12.30. LA 6169, Structure 15, fauna summary	237
12.31. LA 6169, Structure 15, chipped and ground stone type by material type	238
12.32. LA 6169, Structure 15, floor features, seeds and fruits, frequency per liter	239
12.33. LA 6169, Structure 15, floor features, other plant parts, abundance	239
12.34. LA 6169, Structure 15, floor features, wood from flotation sample by weight	239
12.35. LA 6169, Structure 15, floor features, macrobotanical and C-14 samples	239
12.36. LA 6169, Structure 16, stratigraphic descriptions	245
12.37. LA 6169, Structure 16, chipped and ground stone, artifact type by material type	245
12.38. LA 6169, Structure 16, fauna summary	246
12.39. LA 6169, Structure 16, feature data	250
12.40. LA 6169, Structure 16, floor features, seeds and fruits, frequency per liter	254
12.41. LA 6169, Structure 16, floor features, other plant parts, abundance	255
12.42. LA 6169, Structure 16, floor features, wood from flotation samples by weight	255
12.43. LA 6169, Structure 16, floor features, macrobotanical and C-14 samples	255
12.44. LA 6169, Structure 70, stratigraphic descriptions	260
12.45. LA 6169, Structure 70, chipped and ground stone, artifact type by material type	262
12.46. LA 6169, Structure 70, fauna summary	265
12.47. LA 6169, Structure 70, feature data	265
12.48. LA 6169, Study Unit summary information	275
12.49. LA 6169, Study Unit 1, feature data	276
12.50. LA 6169, Study Unit 1, and Feature 29, fauna summary	278
12.51. LA 6169, distribution of ceramic type assigned to mainly Coalition with Early Developmental and Late Developmental components	280
12.52. LA 6169, Study Unit 1, lithic artifact type by material type	282
12.53. LA 6169, Study Unit 6, Area 2, extramural features	284
12.54. LA 6169, combined Study Units 6, 7, and 8, lithic artifact type by material type	287
12.55. LA 6169, Study Unit 6, 7, and 8 fauna summary by feature	287
12.56. LA 6169, Study Unit 7, feature descriptions	292
12.57. LA 6169, Study Unit 8, feature data	297
12.58. LA 6169, Study Units 8 and 9, lithic artifact type by material type	298
12.59. LA 6169, Study Units 8 and 9, fauna summary by feature	298
12.60. LA 6169, Study Unit 9, feature data	300
12.61. LA 6169, Study Unit 10, lithic artifact type by material type	301
12.62. LA 6169, Study Unit 11, Area 1, extramural features	302
12.63. LA 6169, Study Unit 11, lithic artifact type by material type	302
12.64. LA 6169, Study Unit 12, Area 1, extramural features	305
12.65. LA 6169, Study Unit 12, Area 1, Study Unit 13, and upper fill, Structure 4, pottery type distributions	306
12.66. LA 6169, Study Unit 12, Feature 138 area ceramic types	307
12.67. LA 6169, Study Unit 12, lithic artifact type by material type	307
12.68. LA 6169 Study Unit 12, postholes	307
12.69. LA 6169 Area 1, Study Unit 13, feature data	310
12.70. LA 6169 Study Unit 13, lithic artifact type by material type	312

# CHAPTER 11

## LA 265

RICHARD C. CHAPMAN AND JOHN MARK SHEPPARD

LA 265 is an Early Developmental residential site situated on a Pleistocene terrace immediately south of the confluence of the Rio Grande and the Santa Fe River at an elevation of 1,616 m (5,300 ft). Cultural remains are distributed over most of the terrace surface, estimated at over 150,000 sq m. The site was first recorded in the 1930s, presumably by H. P. Mera, and subsequently re-recorded several times in the 1960s and 70s during work associated with the construction of NM 22 and surveys of the Santa Fe River drainage by the Cochiti Dam Project and the Arroyo Hondo Project. Prior to the present undertaking there is no evidence that excavations were conducted at LA 265.

LA 265 required a total of 25 weeks of work by a field crew of up to 19 individuals. Investigations were limited to a strip approximately 50 ft (15.2 m) wide on either side of the NM 22 corridor, which roughly bisects the center of the site terrace along its north-south axis (Fig. 11.1). The total area investigated amounted to just over 15,000 sq m, or 8,000 sq m on either side of the highway right-of-way, and constitutes roughly 10 percent of the total site area. As with other sites on the Peña Blanca Project, the west side of the highway was designated Area 1, the east side was Area 2.

### DATA RECOVERY METHODS

The first stage of data recovery involved an

intensive surface collection of the site within the current project area. Due to the size of the collection area (over 16,000 sq m), 5-by-5-m (25 sq m) collection units were employed. The collection of Area 1 (west side) was accomplished in three days; Area 2 was collected in 1.5 days (Table 11.1).

In each 5-by-5-m collection unit, lithics, ceramics, ground stone, and bone were counted and collected; fire-cracked rock was counted and recorded but not collected. Surface artifact density counts were used to create contour maps of surface artifact densities (separate maps were generated for lithics, ceramics, and fire-cracked rock) and these maps were instrumental in the initial design and placement of preliminary excavation units at the site. In Area 1, four initial 1-by-1-m test pits were excavated in areas of high surface artifact density, three of which immediately encountered subsurface cultural features (Study Units 1, 2, and 3). These units were subsequently expanded by hand in block excavations. Initial tests in Area 2 were less productive and did not result in large-scale excavations during initial stages of site investigations.

As block excavations were expanding in the vicinities of Study Units 1-3, the area of the site north of the 500N grid line on both sides of the highway, was explored with a series of parallel north-south backhoe trenches. These areas had been heavily disturbed by the construction

Table 11.1. LA 265, Surface Artifact Collection

	Area 1	Area 2	Totals
5-by-5-m units collected	288	320	608
Area collected (sq m)	7,200 sq m	8,000 sq m	15,200 sq m
No. of sterile units	36 units	42 units	78 units
Area (sq m) of sterile units	900 sq m	1,050 sq m	1,950 sq m
Total Area Collected (Area 1 and Area 2)			15,200 sq m
Total Area Collected (as a % of total site area)			10%

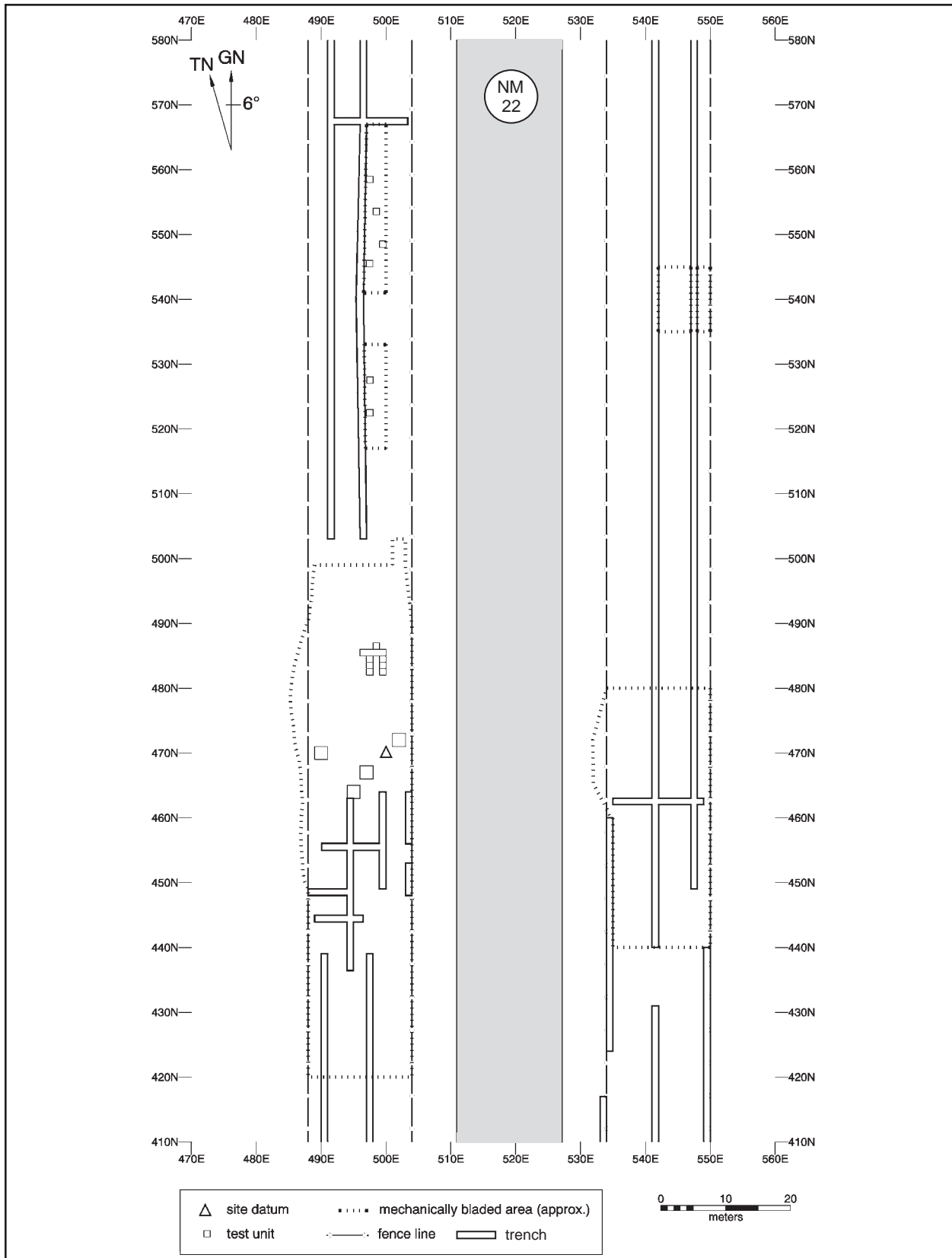


Figure 11.1. LA 265 in relation to NM 22 showing backhoe trenches, test excavation units, and mechanically bladed areas.

of drainage channels parallel to the NM 22 right-of-way, and the channels were observed to contain large quantities of artifacts and several cultural stains. Initial exploratory trenches were placed to expose the lateral slope edges of the channels to determine the location and condition of buried features. A similar strategy of exploratory trenching and cross trenching was employed south of the 440N grid line in a heavily dissected swale that originates near the middle of the LA 265 terrace. Exploratory backhoe trenches ranged from 0.3 to 1.5 m in depth. Selected trench faces were profiled at LA 265, demonstrating that the majority of intact cultural features were concentrated in a comparatively small area from 430N to 490N on the west side of highway right-of-way (Area 1), and from 450N to 480N on the east side of the highway (Area 2). Field examination of artifact assemblage and architectural characteristics suggests that these two areas are probably contemporaneous and may represent a single occupation component that was bisected by the original NM 22 road grade, with the loss of an unknown number of cultural resources. This component undoubtedly extends outside the current project area to the west of Area 1 (as evidenced by high feature density and the presence of an unexcavated pit structure just outside the western right-of-way), whereas the eastern edge of the component may be defined within the current project area. It is within this area of intense occupation that most of the work at LA 265 was concentrated over the course of nearly 25 weeks.

Following the expansion of initial test pits and the placement of additional test pits within the major feature concentration, a backhoe was used to strip large areas around features in order to expose the old occupation surface and additional cultural features. An area roughly 1,663 sq m was mechanically stripped in Area 1 and 880 sq m from Area 2, for a total exposure of 2,463 sq m. Prehistoric occupation surfaces were not well defined in most areas of the site, and so the backhoe removed an upper eolian sand unit down to the BK soil horizon at a depth of approximately 5 to 30 cm below pres-

ent ground surface. As the top of this horizon was exposed, the features which had been excavated into it appeared as black or dark brown stains within the buff-colored colluvial subsoil.

While mechanical stripping operations were underway, block excavations continued in the exposed features. Three pit structures were excavated at the site, and another pit structure was identified but not excavated because of its location outside the project limits. In each structure, an east-west line of 1-by-1-m grid units was placed across the apparent center of the structure and excavated in metric levels, resulting in a 1-m-wide bisecting trench. The resulting trench walls were faced, cleaned, profiled, and photographed. In the largest pit structure (Study Unit 1), a total of eight grid units were excavated in natural stratigraphic layers from present ground surface to floor; two from each quadrant of the structure. In the two smaller pit structures (Study Units 4 and 13), four 1-by-1-m units were excavated stratigraphically, one from each quadrant. Most of the remaining fill from the structures was removed by a backhoe down to a depth of 15–20 cm above the floor. This lower level was divided into quadrants and the fill from each of these quadrants was removed by hand. Once all floor features were excavated, the structure was photographed and mapped with the aid of a plane table and alidade.

The final phase of excavation at LA 265 involved the hand excavation of all cultural features, both within and outside the major habitation features. In most cases, five steps were required to fully expose and document a feature: (1) a pre-excavation plan view was drawn and photographs were made; (2) the feature was bisected along its longest axis (or an arbitrary north-south or east-west grid line in the case of round features), and the first half excavated full cut down to the base or floor of the feature, with all fill 1/8-inch dry-screened; (3) the resulting profile was drawn and photographed; (4) the remaining half was excavated by natural stratigraphic units if appropriate. If the fill was uniform throughout, it was excavated as a unit in shallow features, or in 20 or

40 cm levels in deeper features. Flotation, pollen, and other samples were taken from this half, and the remainder was passed through a 1/8-inch screen; (5) post-excavation photographs were made and, if necessary, a plan view of the feature and architectural profiles were drawn. Small postholes in the floors of structures that were too small to bisect were removed as one full-cut unit and, typically, were not profiled. Possible extramural postholes were bisected by excavating a "window," usually a shovel blade in width. By removing half of the fill and a large area of the surrounding subsoil, the entire profile of these small pits was revealed. This "windowing" technique made it much easier to distinguish real features from rodent and other disturbances.

#### SUMMARY OF CULTURAL FEATURES

Two-hundred seventy cultural features were excavated at LA 265. Features will be discussed and described according to the study unit in which they were excavated.

Area 1 (west side of NM 22) had six study units that contained cultural features (Fig. 11.2). Study Units 1 and 4 are large Early Developmental period pit structures with multiple internal facilities and features. Study Unit 2 encompasses an area roughly 12-by-22 m around a large pit structure (Study Unit 1) that contains numerous extramural pits, thermal features, and small structures. Study Unit 3 is an area comparable in size to SU 2 and located immediately north that contains numerous food processing facilities, including roasting pits, and several pits of uncertain function. Study Unit 9 is an extramural area surrounding a Developmental period pit structure (Study Unit 4) that contains several pits and other features that appear to be associated with the adjacent pithouse. Study Unit 14 is located immediately south of Study Unit 9 and contains several extramural pits and a possible posthole alignment that may be the remains of a windbreak or partial surface structure.

Area 2 (east side of NM 22) has two study units that yielded large numbers of cultural features. Study Unit 13 is an Early Developmental

pit structure with numerous internal features. Study Unit 12 is the old occupation surface around SU 13 that contains numerous pits and other extramural facilities. In the discussion below, each of the principal study units will be briefly described and their integral features will be presented in tabular format.

#### *Study Unit 1 (Structure 1)*

Study Unit 1 (Structure 1) is the largest of the three excavated pithouses on LA 265, and is located on the west side of NM 22 (Area 1), less than 5 m northeast of the smaller Structure 4 (Fig. 11.2). It was oblate in shape with major and minor axes measuring 6.9 m north-south by 6.15 m east-west. A ventilator shaft extended to the east with a vertical opening located 3.0 m from the structure perimeter. Structure 1 was 1.65 m deep and encompassed 36.31 sq m of floor space (Fig. 11.3). Like most features on this site, it was not visible on the modern ground surface. One of the first exploratory test units excavated at the site exposed a carbon-stained, artifact-rich deposit, which later proved to be upper level structure fill associated with Structure 1.

The walls of the structure were composed of hard-packed native soil and were difficult to define, in part because they are extensively eroded and laced with rodent burrows. The floor is similarly disturbed, although a central portion of the floor peripheral to the central hearth was largely intact and composed of gray clay plaster. The stratigraphy of structure fill deposits suggests that the roof was dismantled immediately after the pithouse was abandoned and the open pit was used as a dump for refuse that was discarded predominately to the south, in the vicinity of Study Unit 4, a smaller pithouse that appears to have been constructed and occupied shortly after the abandonment of Structure 1. Thirty-nine floor features were identified within Structure 1, including a central fire hearth and two subsidiary warming pits, three possible foot drums, a ventilator complex, roof support postholes, and various other sub-floor pits, many of indeterminate function. A

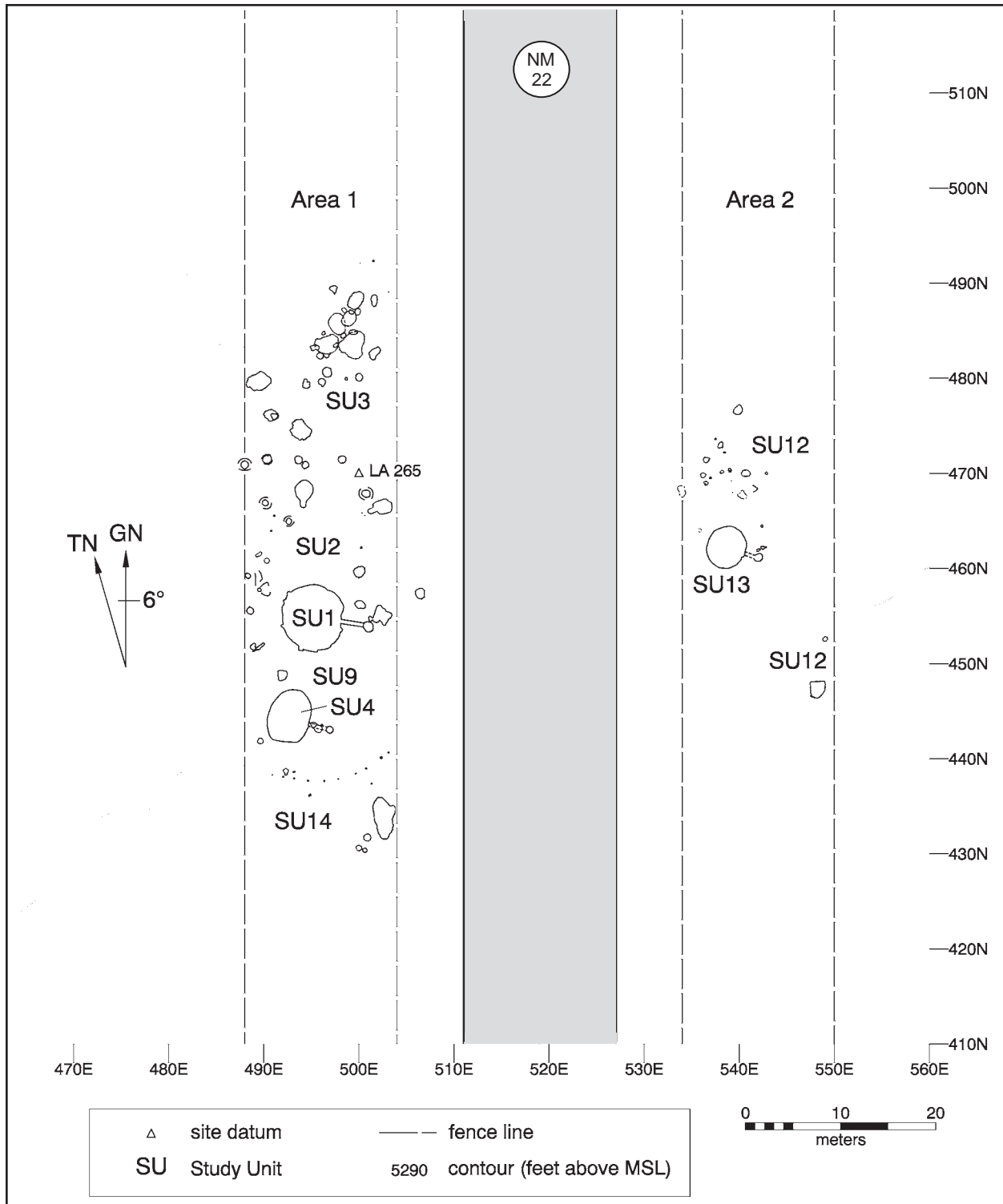


Figure 11.2. LA 265, Study Unit locations.

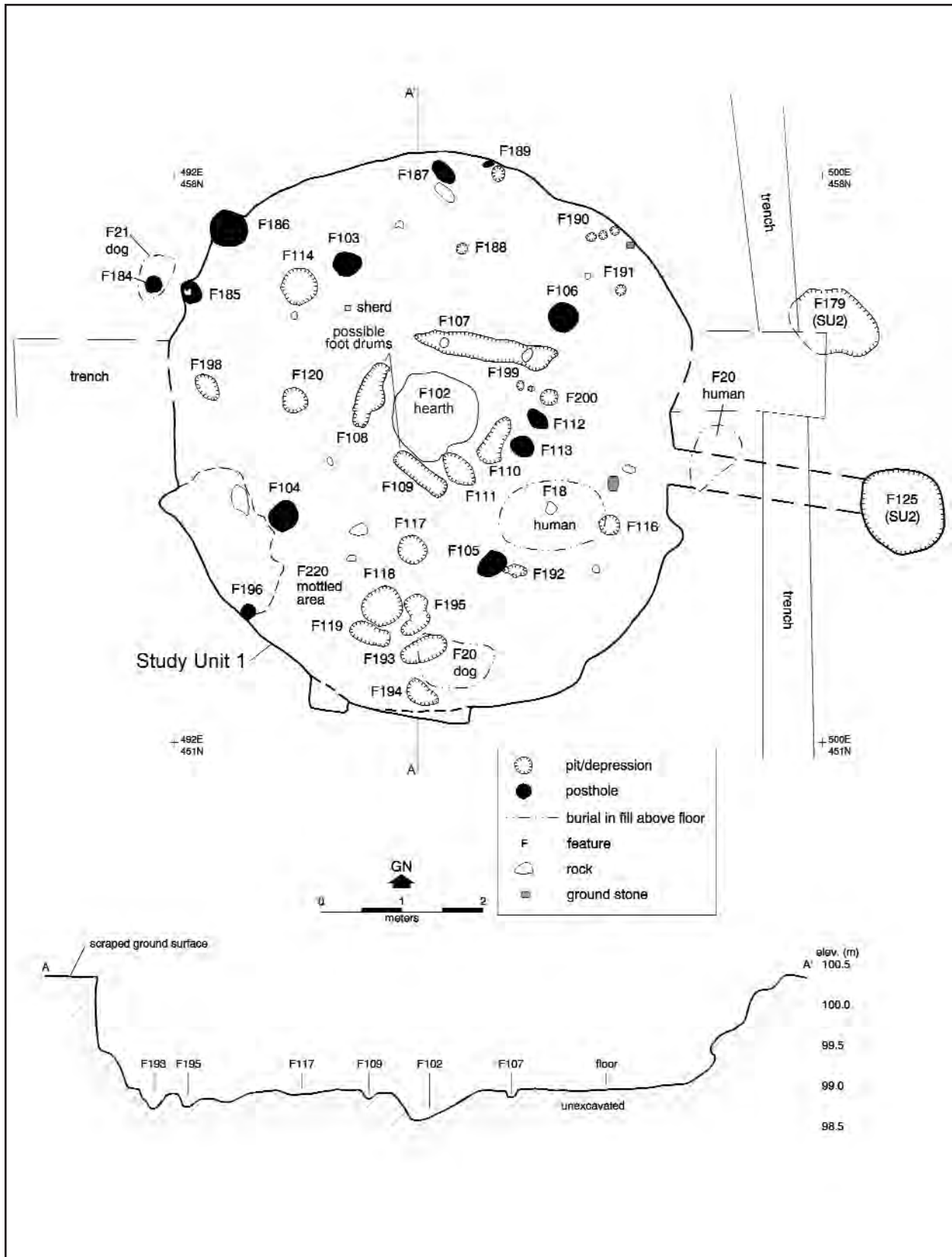


Figure 11.3. Structure 1, pithouse, plan and profile.



single adult human burial, and two articulated dog burials were also encountered in the post-abandonment fill. These and other features are described in Table 11.2.

Two charcoal samples were selected for radiocarbon dating. Sample 653-265 consisted of 3.45 g of *Zea* cob parts from the structure fill, and Sample 1379-265 consisted of 1.57 g of *Zea* cob parts from Feature 106, the northwest roof support posthole. These yielded 2-sigma calibrated results of cal. AD 530–890 and cal. AD 690–1240 respectively. An archaeomagnetic sample from the hearth (Sample 1143) yielded a much tighter date range of AD 820–900.

### *Excavation Procedures and Stratigraphy*

An exploratory 1-by-1-m test unit at 455N/495E encountered coarse carbon-stained sand at about 15 cm below the modern ground surface. This soil was markedly different from the loose eolian sand blanketing the site. It was artifact rich and appeared to be a midden deposit. With depth, the soil became finer grained and darker until a patchy whitish stratum with bits of burned daub was encountered at 75 cm below the surface. This was hard and initially thought to be the floor of a surface structure. Additional units to the east and west, 455N/490–494E, and 455N/496–499E, were laid out to search for walls. All of these units were excavated in arbitrary 10-cm levels. The staining ended in the 491E and 498E units, but the edges were curved, suggesting a circular rather than a rectangular or square structure. The hard whitish stratum was only observed as patches in these other units, and it was determined to be melted wall or roof fall. Below this a stratum of dense cobble fill was encountered in the central units. It was greater than 30-cm thick in some units, yielding over 50 cobbles weighing 5–10 kg per 10 cm level, as well as burned daub and patches of the melted wall/roof fall.

A north-south backhoe trench was excavated along the 494E grid line in order to provide entrance to the rapidly deepening east-west trench of hand-excavated units and to

determine the north and south boundaries of the fill. This backhoe trench was excavated from north to south, and was shallow, removing only 10–20 cm of the eolian surface sands to expose the sterile Bk stratum until the north edge of the stain was encountered in the 458N grid. The trench continued south, exposing the top of the fill until it ended in 450N grid. This gave our "midden deposit" dimensions of 9 m north-south by 8 m east-west. It was then excavated deeper in the center, sloping upward to the edges of the fill, creating a ramp for access to the 455N trench of 1-by-1-m grid units. Unlike the grid units, fill from the backhoe trench was not screened for artifacts.

Structure floor was eventually reached at 1.65 m in 455N/495E, and was followed to the east and west. To comply with OSHA regulations, the 456N/491–498E row of units was hand-excavated to 48 inches above the floor. This fill was not screened.

Also at this time, the east and west walls in 455N/491E and 455N/498E were excavated through, both for safety reasons and in hopes of revealing a clearer profile. The walls were eroded and no plaster was evident, making them difficult to distinguish in some areas. The east wall was most easily defined, rising vertically from the floor, then sloping outward, where the upper portion had eroded away. The west wall was more difficult to define. The floor rose about 40 cm higher than the rest of the exposed floor, which was fairly flat to this point. Above this, the wall was interrupted by a 50-cm-tall gap in the wall. It is not clear if this was entirely a rodent disturbance or large wall storage feature, but much rodent activity was noted.

A profile of the south wall of the 455N trench was drawn, and photographs, flotation, and bulk soil samples and a pollen column were taken.

After hand-excavation of eight 1-by-1-m units, a backhoe was used to remove the remainder of the fill to a depth of 10–15 cm above the floor. The surface sands were first scraped away to expose the perimeter of the structure, then a smaller bucket was utilized to

Table 11.2. LA 265, SU 1, Structure 1 Intramural Features

Feature No.	Feature Type	Location (Center point)	Dimensions (L x W x D) cm	Shape	Fill	Contents	Comments
102	Structure hearth	N 455.05 E 495.20	110 x 105 x 38	Irregular round	See profile.	Occupational fill: lithics, ceramic pipe fragment, fire-cracked rock, bone, charcoal, adobe fragments	Central structure hearth, not collared—see text.
103	Posthole—main roof support	N 456.90 E 494.13	34 x 28 x 42	Oval	Light brown sandy loam with very little charcoal flecking.	Post-occupational fill: lithic, ceramic.	Main roof support—NW quad; walls are mostly vertical.
104	Posthole—main roof support	N 453.80 E 493.85	44 diameter (reducing to 12 at base) x 46	Irregular round	Mottled reddish and brown sands with small adobe fragments.	Post-occupational fill: lithic, ceramic, bone, charcoal.	Main roof support—SW quad; walls are mostly vertical for 20 cm, then constrict to 12 cm diameter at base.
105	Posthole—main roof support	N 453.20 E 495.92	38 x 33 (reducing to 31; 17 diameter at base) x 45	Irregular round	1. 10YR 5/4 yellowish brown sand with charcoal and small adobe fragments (10–24 cm). 2. 10YR 5/3 brown compacted fine sand with more charcoal and few adobe fragments (9–21 cm). 3. 10YR 5/3 coarser sand with less charcoal and few adobe fragments (9–15 cm).	Post-occupational fill: bone, charcoal.	Main roof support—SE quad; reduces to 31 diameter at 11 cm deep, becomes bowl-shaped at 34 cm deep, 17 cm diameter at base.
106	Posthole—main roof support	N 456.25 E 496.80	27 x 20 x 70+	Oval	1. Light brown loose sand with pumice and charcoal flecking (7 cm). 2. Dark brown sand with pumice but no charcoal (11 cm). 3. Light brown sand w/ charcoal flecking but no pumice (52+ cm).		
107	Large linear pit—possible footdrum	N 455.95 E 495.53	179 x 31 x 8–16	Irregular rectangle	See profile.	Occupational(?) fill: lithics, bone, adobe fragments (some appear to be plaster coated) – possible burned board.	See text.

Table 11.2. Continued.

Feature No.	Feature Type	Location (Center point)	Dimensions (L x W x D) cm	Shape	Fill	Contents	Comments
108	Large linear pit—possible footdrum	N 455.27 E 494.40	90 x 38 x 8	Irregular rectangle	See profile.	Occupational(?) fill- bone, charcoal (possible burned board).	See text.
109	Large linear pit—possible footdrum	N 454.30 E 495.05	76 x 23 x 11	Irregular rectangle	See profile.	Occupational(?) fill- charcoal.	See text.
110	Ashpit	N 454.70 E 495.96	68 x 40 x 8–28; smaller pits: 25 x 24 x 8, 23 x 18 x 20	Irregular oval	10YR 5/3 brown sandy loam with pumice and concentrations of charcoal and ash	Occupational fill: lithics, bone, charcoal, ceramic, shell bead, adobe fragment.	Between hearth (Feature 102) and S deflector support posthole (Feature 113), a large shallow pit with 2 smaller pits extending from the base.
111	Large pit—unknown function	N 454.35 E 495.50	65 x 35 x 2–14	Irregular oval	10YR 6/4 light yellowish brown fine sandy loam with pumice and charcoal.	Post-occupational fill- lithics, bone, charcoal.	SE of hearth, between possible footdrum (Feature 109) and ashpit (Feature 110); base is irregular (rodent disturbed) and deepest to the SE (away from the hearth).
112	Posthole—deflector support	N 455.00 E 496.47	32 x 22 (expanding to 33 x 29, then reducing to 21 x 13) x 48	Oval	10YR 6/3 pale brown sandy loam with pumice and charcoal.	Post-occupational fill- lithics, bone, charcoal.	Northern deflector support posthole, between hearth (Feature 102) and ventilator tunnel opening (Feature 125).
113	Posthole—deflector support	N 454.65 E 496.30	48 x 31 (reducing to 16 x 10) x 47	Oval reducing to round	10YR 6/3 pale brown sandy loam with charcoal and bits of adobe.	Post-occupational fill- lithics, ceramic, bone, charcoal.	Southern deflector support posthole, between hearth (Feature 102) and ventilator tunnel opening (Feature 125).
114	Small pit—unknown function	N 456.62 E 493.52	42 x 26 x 20	Irregular oval	Light brown sand w/ pumice.	Post-occupational fill- NAR.	< 1 m SW of the NW main posthole (Feature 103); heavily rodent damaged.
116	Small pit—unknown function	N 453.68 E 497.35	48 x 27 x 23	Irregular oval	10YR 6/3 pale brown sand.	Post-occupational fill- bone.	About 1 m SW of vent shaft tunnel opening (Feature 125); W wall slopes inward, E wall vertical but rodent damaged.
117	Small burned pit	N 453.35 E 494.95	40 diameter x 2–14	Round	Charcoal and ash.	Occupational fill- bone fragments (mostly rodent), charcoal.	Irregular floor, S, W walls and floor are oxidized, heavily rodent disturbed; SSW of hearth (Feature 102), Feature 118, 119, 193 and 195 are nearby
118	Small burned pit (sealed)	N 452.70 E 494.57	51 diameter x 15	Round	Cap: 10YR 6/3 pale brown hard floor plaster (0.5–1 cm); fill: 10YR 7/2 light rock.	Occupational fill- lithic, ceramic, bone, charcoal, fire-cracked rock.	Capped w/ floor plaster, S and W walls are oxidized.

Table 11.2. Continued.

Feature No.	Feature Type	Location (Center point)	Dimensions (L x W x D) cm	Shape	Fill	Contents	Comments
119	Small bell-shaped storage pit	N 452.33 E 494.42	54 x 26 (reducing to 35 x 21 then belling to 53 x 36) depth = 49	Irregular oval	1. 10YR 6/3 pale brown sandy loam with charcoal (26 cm); 2. 10YR 6/4 light yellowish brown coarse grained sandy loam with less charcoal (23 cm)	Post-occupational fill: lithics, ceramics, bone, charcoal.	Bell-shaped in all directions except to the NE (under Feature 118).
120	Small unburned pit	455.32N/493.48E	ca. 28 diameter x 8	Irregular round	10YR 6/3 pale brown sandy loam with pumice and charcoal.	Post-occupational fill: lithics, ceramics, bone, charcoal.	Round and shallow with a flat bottom, S portion (from E to SW) heavily rodent disturbed.
184	Small pit—possible posthole	456.65/491.70E	24 diameter (reducing to 18) x 26	Round	Loose tan sand with pumice and small adobe fragments.	Post-occupational fill: NAR (beginning elevation is ca. 31 cm above the structure floor—ending elev. is ca 8 cm above).	Located outside the base of the structure wall and elevated above the floor, possibly a posthole located in the wall or on an eroded bench.
185	Small pit—possible posthole	456.55N/492.23E	20 x 14 (reducing to 6 diameter) x 18	Oval reducing to round	10YR 5/3 brown clay loam with pumice.	Post-occupational fill: charcoal, bone, clay ball/bead (all fill collected as flotation sample).	Possible posthole at the base of the NW wall.
186	Large pit with a possible posthole	457.32N/492.65E	pit—64 x 45 x 8–20; posthole—38 x 27 x 28	Irregular oval	10YR 6/3 pale brown sandy clay loam with pumice.	Post-occupational fill: lithics, charcoal, bone, unidentified seed, mica flakes (all fill)	A shallow pit with a possible posthole on its N edge which extends underneath the NW wall; highly rodent disturbed.
187	Small pit—possible posthole	458.03N/495.30E	20 x 15 (reducing to 5) x 12	Oval	10YR 5/3 brown clay loam.		At base of N wall.
188	Small pit—possible posthole	457.18N/495.55E	14 x 13.5 x 11	Round	10YR 5/3 brown clay loam with pumice and charcoal.	Post-occupational fill: charcoal (all fill collected as flotation sample).	Between hearth and N wall.
189	2 pits—A. small storage pit; B. posthole	A. 458.18N/495.82E; B. 458.02N/496.00E	A. 14 diameter x 16.5; B. 16 x 15 x 33	A. Round; B. Oval	Both 10YR 5/3 brown clay loam.	Post-occupational fill: A. Charcoal, burned bone, pebbles, mica flakes; B. Charcoal, pebbles, mica flakes (all fill collected as flotation sample).	A. Extends 26 cm under NNE wall; B. At base of NNE wall
190	3 divots	457.25N/497.27E	A. 11 diameter x 5; B. 12 diameter x 5.5; C. 15 x 12 x 3	A. Irregular round; B. Irregular round; C. Irregular oval	A. 10YR 6/3 pale brown clay loam with pumice; B. 10YR5/3 brown silty clay loam with pumice; C. 10YR 6/3 pale brown clay loam with pumice.	Post-occupational fill: A. & B. NAR. C. charcoal, mica flake (all fill collected as flotation sample).	A line of 3 small pits at the base of the NE wall.

Table 11.2. Continued.

Feature No.	Feature Type	Location (Center point)	Dimensions (L x W x D) cm	Shape	Fill	Contents	Comments
191	Small bell-shaped storage pit	456.55N/497.50E	26 x 24 (reducing to 19 diameter, then beelling to 35 x 31) x 55	Oval	10YR 6/3 pale brown sand with pumice and charcoal.	Post-occupational fill: lithics, scraper, ceramics, bone, fire-cracked rock, charcoal, baked clay fragments.	Slightly bell-shaped; near NE wall.
192	Small pit—unknown function	453.12N/496.19E	38 x 23 x 18	Irregular oval	10YR 6/3 pale brown fine sand with pumice and charcoal flecking.	Post-occupational fill: lithic.	Floor slopes downward from W to E; adjacent to Feature 105.
193	Large pit—unknown function	452.15N/495.07E	98 x 40 x 19	Irregular oval	10YR 6/3 pale brown fine sand with pumice and charcoal.	Post-occupational fill: charcoal.	Very irregular with undulating floor, highly rodent disturbed; possibly non-cultural.
194	Large pit—unknown function	451.58N/495.03E	107 x 50 x 27	Irregular oval	10YR 6/3 pale brown fine sand with pumice and little charcoal.	Post-occupational fill: bone fragments, charcoal.	Very irregular with undulating floor, highly rodent disturbed; possibly non-cultural.
195	Small pit—unknown function	452.48N/494.98E	52 x 25 x 7	Irregular kidney	10YR 6/3 pale brown sandy loam with pumice.	Post-occupational fill: rodent mandible.	Shallow, irregular and rodent disturbed; possibly 2 small pits blurred together by bioturbation or non-cultural.
196	Small pit—possible posthole	452.60N/492.90E	25 diameter (reducing to 14) x 30	Oval	1. Ash stained sandy loam with charcoal and small pieces of burned adobe(12 cm); 2. Consolidated strong brown fine grained sandy loam (18 cm).	Post-occupational fill: NAR (all fill collected as flotation sample).	At the base of the SW wall, the S edge of Feature 220 abuts its N½.
198	Small unburned pit	455.36N/492.40E	36 x 23 x 11.5	Irregular oval	10YR 6/3 pale brown silty loam with pumice and very little charcoal.	Post-occupational fill: NAR; (all fill collected as flotation sample).	Shallow and basin-shaped; E and NE walls are disturbed, located in an area of intense rodent activity.
199	2 divots	455.40N/496.63E	A. 12 x 11 x 5; B. 6 diameter x 5	A. Irregular round; B. Round	Both: 10YR 5/3 brown sandy clay loam.	Post-occupational fill: A. charcoal, bone, grass seeds; B. charcoal, bone (all fill collected as flotation sample).	60–70 cm ENE of hearth, <50 cm NW of deflector posthole (Feature 112), Feature 200 is adjacent to the SE.

Table 11.2. Continued.

Feature No.	Feature Type	Location (Center point)	Dimensions (L x W x D) cm	Shape	Fill	Contents	Comments
200	Small pit—unknown function	455.28N/496.63E	32 x 28 x 14	Irregular round	Loose sand with pumice.	Post-occupational fill: bone.	Has a 1–3 cm deep shelf-like protrusion in NW 1/4; adjacent to and SE of Feature 199, 50 cm NE of deflector posthole (Feature 112).
220	Large pit—unknown function	453.40N/492.75E	190 x 80 x 15	Irregular oval	1. 10YR 6/3 pale brown sandy loam with pumice and charcoal, pebbles, and adobe fragments- very blocky (appears to be roof fall mashed into the top of the feature) (1–10 cm); 2. 10YR6/3 pale brown fine sandy loam with pumice and occasional charcoal and ash (6–15 cm).	Post-occupational fill: lithics, ceramics, bone (mostly rodent), shell bead, mica flake, charcoal, large metate fragment.	Floor is fairly flat but rodent disturbed, between SW posthole (Feature 104) and SW wall, possibly non-cultural (an area of extremely rodent damaged or missing floor).

(NAR = no artifacts recovered)

remove the fill, staying 20–25 cm from the edges of the structure. This worked until an adult human burial (Feature 18) was encountered in the southeast quadrant of the fill. The portion that remained in situ was mapped and removed, and all loose fill in the vicinity was screened to recover additional disturbed remains. From that point on, the fill of the structure was removed by hand but not screened, in anticipation of more post-occupational features. Two dog burials (Feature 20 and 21) were encountered in the southeast and northwest quadrants. Feature 238, a fragmentary human infant burial, was found later when removing fill from the eroded wall above the vent shaft tunnel opening. In the southeast quadrant, the base of a deer skull with shed antlers and at least 25 cobbles were encountered. The skull was located in the middle of the fill, 80 cm above the floor and 80 cm below the ground surface. The skull fragment and antlers were collected, bagged, and the surrounding matrix removed before it could be mapped or photographed. Consequently it was not given a feature number.

The remaining fill, 10–15 cm above the floor, was divided into quadrants and excavated to floor as a single roof fall stratum. This fill was screened and flotation samples were taken. Quite a few rocks were encountered on the floor and pollen samples were taken from underneath them. At this point it became apparent that the upper portion of the fill was much larger than the footprint of the floor. Upper portions of the structure walls had eroded, forming a large basin. The remaining fill was removed from these sloping "walls," following the highly eroded contact with the Bk stratum.

The floor features, with their darker, usually carbon-stained fill, stood out well in contrast with the smooth whitish floor. All visible stains on the floor were mapped with a plane table and alidade and given a feature number (although several would prove to be non-cultural after further investigation). Photographs were taken of the floor before feature excavation began.

### *Stratigraphy*

The floor of Structure 1 was at a depth of 1.65 m below the present ground surface, and the stratigraphy of infilling episodes (both cultural and noncultural) resulted in a series of basin-shaped lenses of soil and debris, each of which sloped upward slightly from the center of the structure toward the wall margins. Figure 11.4 illustrates a profile of the fill stratigraphy and contains descriptive information about the soil composition, color, and content of each stratum.

The uppermost stratum, designated Stratum 1, was largely sterile and consisted largely of eolian sand deposits. This deposit extended from the present ground surface to a depth of 70 cm in the center of the structure. The few artifacts found in this relatively uniform stratum were likely introduced by wind and water from adjacent ground surfaces rather than by human agents.

Beginning at about 70 cm below ground surface at the center of the structure and extending to a depth of 133 cm were a series of bedded deposits containing a considerable amount of cultural debris including chunks of burned and unburned adobe, charcoal fragments, pebbles, cobbles, faunal remains, and ceramic and lithic artifacts. Six major strata were identified during excavation (Strata 2.1–2.6), differentiated both by their clear bedding relative to one another, and by some differences in content. Strata 2.1 through 2.3, the uppermost cultural strata, contained smaller pieces of burned and unburned adobe, and smaller cobbles than did Stratum 4; whereas Stratum 6 contained much larger burned and unburned adobe fragments that seemed to have been introduced from the east side of the depression. The stratigraphy appears to represent several sequences of dumping episodes, and the clear bedding of the different strata point to an intermittent filling sequence rather than a continuous process.

A human burial (Feature 18) was interred in the southeast portion of the structure, near the lowermost deposits of cultural fill in Stratum 2 just above the roof cap material

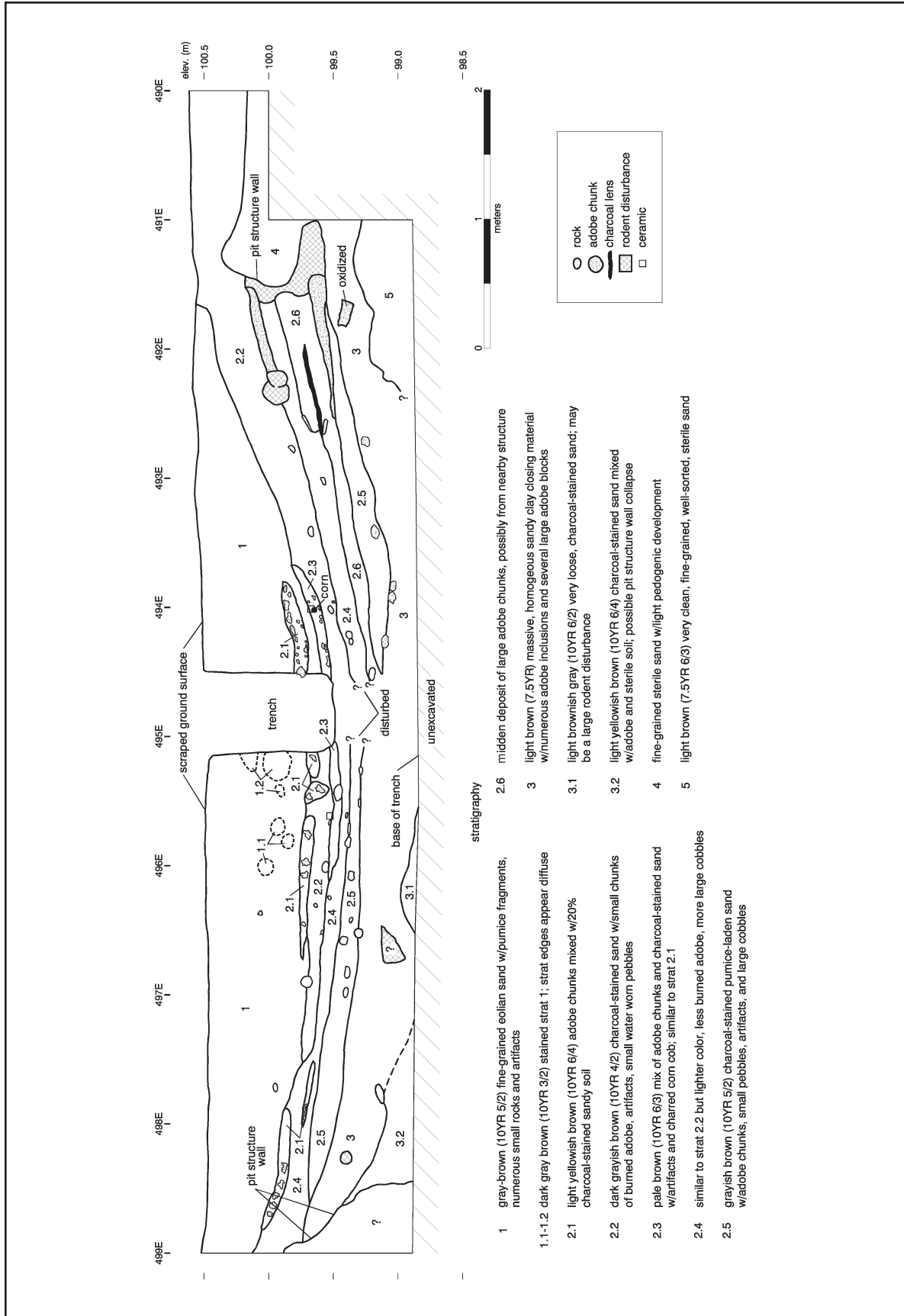


Figure 11.4. Structure 1, pithouse stratigraphy.



defined as Stratum 3. This burial was disturbed by mechanical fill removal operations being conducted after the hand-dug test samples had been obtained, and precise definition of the exact level of origin of the burial pit could not be obtained. It seems clear however that the individual was interred during the earlier stages of use of the structure depression as a midden area, given the location of the bones directly above the Stratum 3 roof cap material. The individual was female, approximately 35–45 years old at death, and was interred in a flexed position lying on her left side with the skull oriented to the east. No grave goods were associated with the burial, and several of the bones exhibited carnivore tooth puncture marks and gnawing, indicating the original burial pit had been shallow enough to permit carnivores (most probably dogs) access to the remains.

A dog burial (Feature 20) was found interred at a higher level in the Stratum 2 cultural fill in the south-central portion of the structure, near the south wall. The skeleton was articulated, and was lying on its left side with the skull oriented to the northwest. No grave goods appeared to be associated with the burial.



Figure 11.5. Dog burial in fill of Study Unit 1, pithouse.

A second dog burial (Feature 21) was found interred in the "shelf" above the floor level in the northwest sector of the pithouse, near the ancillary posthole Feature 184 (Fig. 11.5). This dog was buried in a flexed position lying on its right side with the skull oriented to the south. The spinal column was disarticulated at the fifth cervical vertebra, in a fashion consistent with a deliberately broken neck. No grave goods were found in association with this burial, and the dog was clearly interred during the later stages of cultural infilling of the structure depression.

The lowermost stratum in the structure was a 30-cm-thick layer of homogeneous adobe material containing numerous pieces of structural adobe and a few large adobe blocks, resting directly on the floor throughout much of the structure interior space. This lens has been interpreted as the original roof cap material, and contains hardly any artifacts. Some evidence exists that the structure may have stood with its roof still intact for some short period of time after abandonment. Strata 3.1, 3.2, and 5 are sand deposits lying directly on the floor in localized areas indicating some infilling due to wall erosion, prior to the removal of the roof. After the roof cap material was deposited on the structure floor, an episodic use of the structural depression as a dump or midden is clear as the series of bedded strata containing structural debris (adobe chunks), charcoal, cobbles, faunal remains, and artifacts (ceramic fragments, lithic debitage), which accumulated to a height of nearly a meter above the original floor level. These strata clearly indicate that residential occupation of the site was occurring somewhere in the immediate vicinity. At some time after that, cultural debris stopped being introduced into the depression, and it gradually infilled with eolian and waterborne sand and silt.

#### *Walls and Floor*

The floor was well prepared, compacted and fairly smooth. The lowest level of fill separated cleanly, exposing a hard whitish surface. Almost all of the walls have been eroded, only the lower 20–40 cm remained intact. The intact walls ranged from 20 cm to 1.0 m high above the



Figure 11.6. Structure 1, pithouse, after excavation, view to the east.

floor, and were mostly vertical and smooth. The fill separated cleanly from the intact portion. Above that, excavation was halted when the contact between the structure fill and the surrounding sterile Bk stratum was encountered.

#### *Floor Features*

Thirty-nine floor features were excavated. These included a central hearth, ash pit, and deflector support postholes related to the ventilator system; four primary roof support postholes and six possible ancillary roof support postholes; warming pits; deep storage pits; and shallow basin-shaped pits of unknown function (Fig. 11.6).

The structure hearth (Feature 102) was located near the center of the pithouse (Fig. 11.7). It was large, measuring 110-by-104 cm in outline, but had no adobe collar. Its orientation with the ventilator shaft and tunnel is 101 degrees 30 minutes east of grid north. The ash pit (Feature 110) and deflector postholes (Features 112 and 113) were located to the east-

southeast along this axis, with the ash pit lying between the hearth and the deflector support postholes. Linear pits, possibly footdrums (Features 107, 108 and 109) were located to the north, west, and south of the central hearth. These features are roughly rectangular in outline, measuring 76 to 179 cm long by 23 to 38 cm wide, and are shallow, ranging from 8 to 16 cm deep. Two of the features (Features 107 and 108) contain carbonized remnants of wooden planks in their fill (Figs. 11.8, 11.9, 11.10). The structure also contained two oxidized warming pits (Features 117 and 188), located 1.0 and 1.5 m south-southwest of the hearth. An additional pit of unknown function (Feature 111) was also found adjacent to the south of the hearth. The floor surrounding the hearth and these features had been plastered, but erosion or possibly foot traffic during use of the structure had rendered it patchy in several areas.

Two pits (Features 119, 191) were bell-shaped. The remaining pits were of varying sizes and depths, predominantly basin-shaped, and contained only small amounts of cultural

fill such as ceramic and lithic artifacts and small pieces of charcoal. One pit (Feature 118) was sealed with floor plaster indicating a remodeling episode. The area of the central hearth had also undergone remodeling, and there was some evidence that the horizontal ventilator shaft (Feature 125) had been structurally modified during its term of use as well.

No floor feature could unambiguously be classified as a sipapu. Features 120 and 198 were situated along the ventilator-fire pit axis, between the fire pit complex and the rear wall of the structure, or in an area where ritual features interpreted as sipapus might be found. Both were shallow (8 and 12 cm deep) and basin shaped. Feature 120 was circular, measuring 28 cm in diameter, while Feature 198 was

oval, measuring 36-by-23 cm along major and minor axes. Fill in both features consisted of sand intermixed with pumice, charcoal, and a few artifacts. Neither feature seems to fit the definition of sipapu as described in the literature.

The remaining features were fairly well scattered across all of the quadrants. The largest area of open space was located between the east wall and a line formed by the eastern roof support postholes and the deflector postholes. A smaller area of open space was located north of the hearth, between the north roof support postholes. This was not a lot of open floor space for such a large structure suspected of fulfilling ritual or other integrative functions.

The hearth feature (Feature 102) represents one of the few episodes of remodeling in this structure, as it appears to be a shallow basin-shaped hearth overlying a storage pit. The hearth appears to have had several functional changes over its lifespan. Excavation revealed a large shallow basin, with two apparent use episodes, overlying an irregularly round pit. This appeared to be a storage pit that predated the hearth; its fill was not hearth-like, having only occasional charcoal and ash, and no oxidation was noted on its floor or walls. Three strata were identified. Stratum 1 consisted of 1–20 cm of 10YR 4/1 dark gray, fine-grained sand and mottled compacted ash. The ash, located mostly in the eastern one-half of the pit, was 10YR 6/1, 7/1 and 8/1, gray, light gray, and white. Both the sand and ash contained charcoal. This overlay a thick, up to 14-cm-thick layer of 7.5YR 5/4 brown oxidized silty loam. Beneath this, Stratum 3 was the lower pit fill, 10YR 6/4 light yellowish brown clay loam, with only occasional charcoal and ash.

Excavation was halted after the removal of Stratum 1 to expose the oxidized sands of Stratum 2. This oxidation appeared to be the floor of the hearth, but its depth seemed inadequate for its diameter and the overall size of the structure. Three pieces of fire-cracked rock (0.5 kg) were noted near the center of the fea-

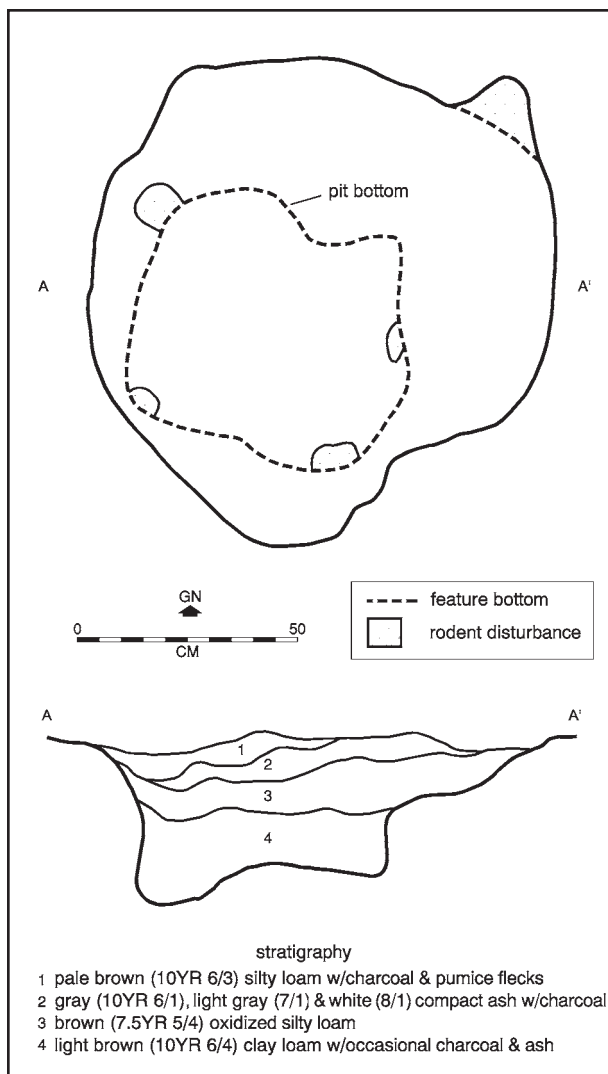


Figure 11.7. Hearth, Feature 102.

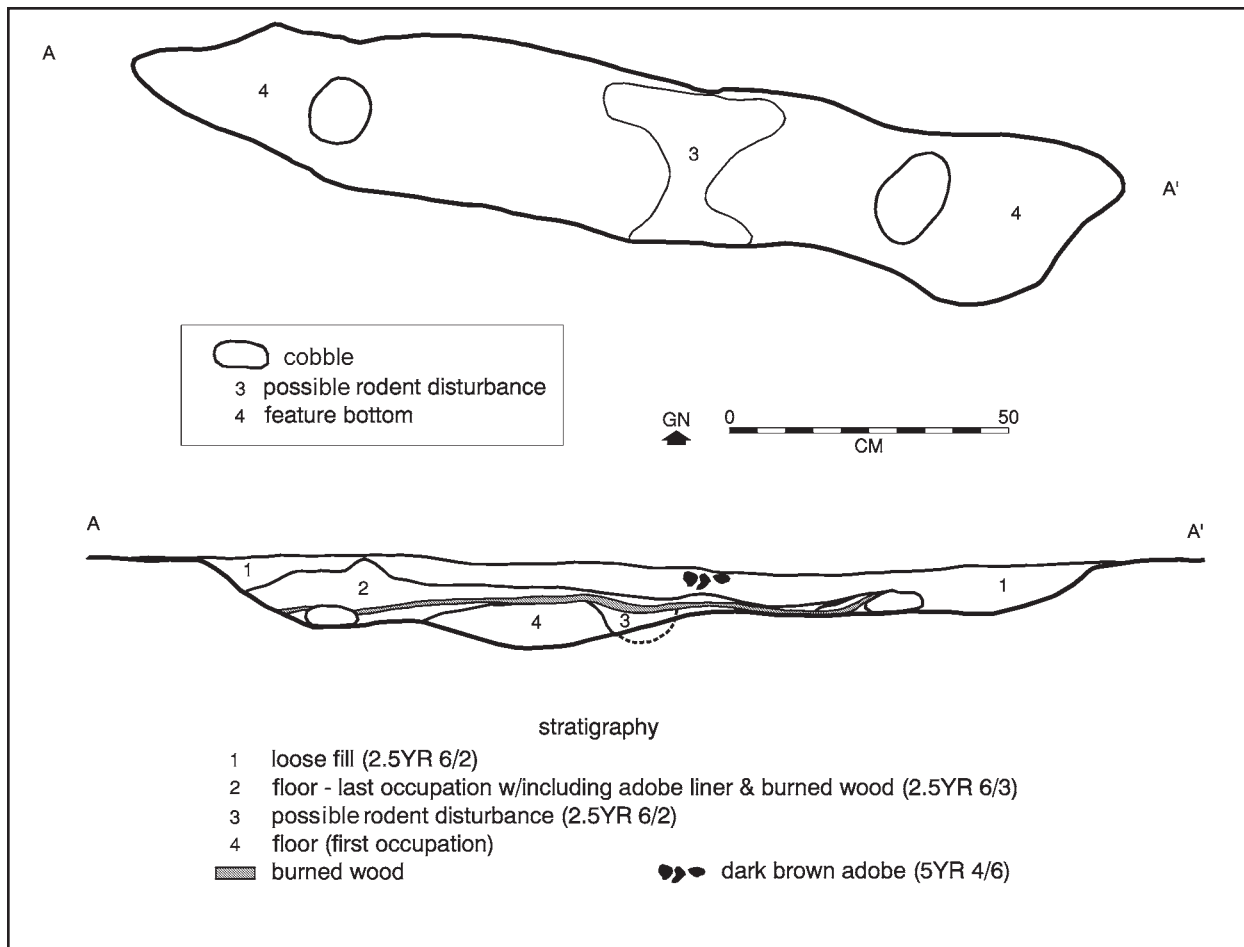


Figure 11.8. Possible foot drum, Feature 107.

ture on top of Stratum 2. Probing indicated that this stratum was soft and a harder surface lay below. It was removed to reveal an unoxidized basin shape up to 20 cm deep overlying a roughly circular, 70-cm-diameter darker soil-filled pit. This fill was removed revealing a pit 11–22 cm deeper than the shallow basin, reaching a total depth of 29–38 cm. Its walls were almost vertical and its floor uneven, deeper in the west half. Neither the walls nor floor were oxidized.

It appears that this feature originally functioned as a storage pit and was subsequently remodeled into a basin-shaped hearth. The hearth itself exhibits two episodes of use. The original pit never contained a fire intense enough to oxidize either the base of the basin or the top of the storage pit fill. Silty loam then accumulated (perhaps a hiatus in the occupation of the structure) or was brought in to par-

tially fill the basin. Ensuing fires were intense enough to oxidize the silts and crack three rocks that had been placed on its surface. None of the other features exhibited remodeling to this extent.

#### *Ventilator Shaft*

Feature 125 was the vertical ventilator shaft and tunnel for Study Unit 1. They were oriented at an angle of 101 degrees 30 minutes east of grid north from the hearth, Feature 102. The vertical shaft of the ventilator complex may have been remodeled and used as a storage pit after the structure was abandoned. The feature at the time of excavation was a very large bell-shaped pit, which measured 120-by-95 cm at the surface and expanded to 160-by-150 cm at its base. Depths ranged from 125 cm on the east edge to 142 cm on the west, at the mouth of the horizon-

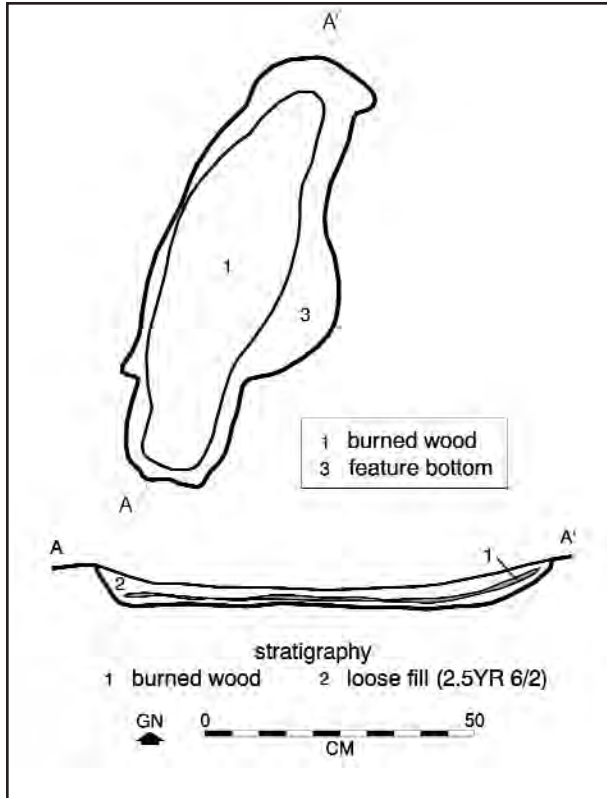


Figure 11.9. Possible foot drum, Feature 108.

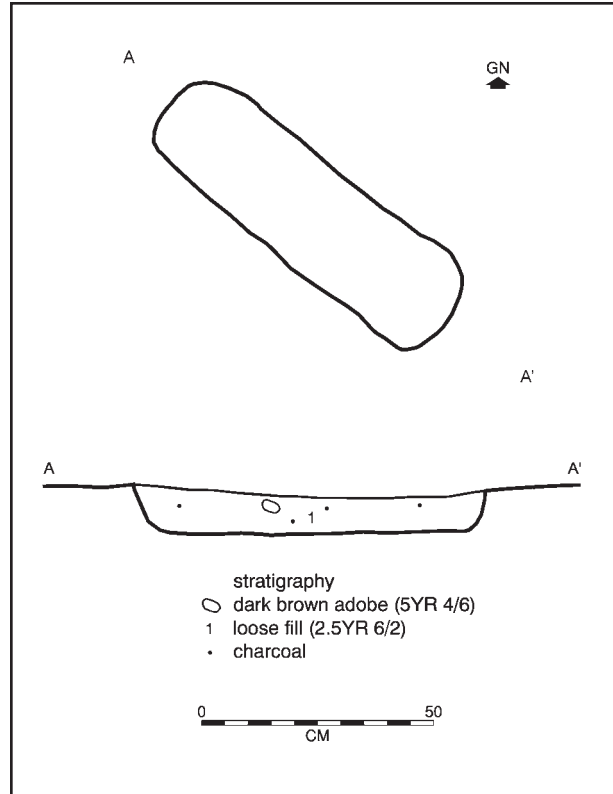


Figure 11.10. Possible foot drum, Feature 109.

tal tunnel. The east half of the vertical shaft was excavated full cut, exposing four strata of fill. Stratum 1 was 37–44 cm of 10YR 4/2 dark grayish brown charcoal-stained sandy loam. Stratum 2 was 9–24 cm of 10YR 5/3 brown silty loam with charcoal and mottling. Stratum 3 was mainly unburned adobe fragments, 32–49 cm deep, in a matrix of 10YR 6/3 pale brown sandy loam with pumice and charcoal. Many of these adobe fragments had hand or post impressions, but none was collected. Stratum 4, which included the tunnel fill, was 34–41 cm of 10YR 6/4 light yellowish brown slightly mottled silty loam with little charcoal. Some adobe fragments were noted on or near the floor. The west half of the feature was excavated by these strata. Artifacts recovered included lithics, ceramics, and bone, mostly rodent. More than 90 cobbles and fire-cracked rock weighing over 36 kg were noted. The adobe fragments were not counted or weighed.

The walls were generally smooth and regular, although missing in places due to bioturbation. No evidence of oxidation was noted.

The floor was generally flat, but sloping downward from east to west.

The horizontal tunnel for the Study Unit 1 ventilator was quite long, estimated to be 2.3 m. The opening inside Study Unit 1 was small, measuring 32 cm high by 31 cm wide. The tunnel had vertical walls and a slightly arched top, and a flat floor, which was 2–3 cm above the floor of the pit structure. The opening inside the vertical shaft was slightly larger, measuring 36-by-36 cm, also with a flat floor. The basal elevation of each opening was the same, 1.42 m below the scraped surface of Study Unit 2. The interior of the tunnel was excavated only 90 cm in from the shaft, and 92 cm in from the structure due to safety reasons, but a probe confirmed that both excavated sections were indeed part of the same tunnel. The remainder of the fill was not removed.

#### Roof

The roof was supported by four primary posts (Features 103, 104, 105, 106) in a square layout

centered over the fire pit/ash pit/deflector facility. These postholes ranged from 27 to 44 cm in diameter and from 42 to 70 cm in depth. Basal diameters for three of the postholes ranged between 12 and 20 cm indicating the probable diameter of the posts themselves. Feature 103 was somewhat wider at the base, but could have held a post of similar size through use of shims. Six additional floor features may also represent postholes because of their relatively larger depth to diameter ratios (Features 184, 185, 186, 187, 188, and 196). Five of these (Features 185, 186, 187, 189, and 196) are located near the base of the pithouse walls in the western portion of the structure (Fig. 11.3), and the sixth (Feature 184) was situated above the floor in the rear wall of the structure. No other details of roof construction could be discerned, as all major structural elements had apparently been removed at or shortly after the time of abandonment. No evidence of burning was found in the support postholes or in the Stratum 3 layer of adobe material representing the original roof cap.

#### *Abandonment*

Abandonment seems to have been orderly. All four primary roof support posts had been removed and there was no evidence of the structure having burned at any time during the abandonment process. The floor, postholes, and other floor features were covered by a thick layer of adobe roof cap material, which overlaid the entire structure floor. Subsequent to the removal of the roof supports, and possibly wooden roof members, the structure depression was used as a midden area. Stratified lenses of midden deposit filled the depression for about half its depth, to within about 75 cm of the surrounding ground surface, indicating residential occupation in the immediate vicinity. The vertical shaft of the ventilator (Feature 125) had been reused as a storage pit, in an extramural area containing other bell-shaped storage pits. The final infilling of the structure depression was due to natural agents of wind and water erosion, with no

admixture of cultural material, indicating the likelihood that no residential occupation was occurring within the immediate vicinity of the feature.

#### *Artifacts*

Artifacts recovered from Structure 1 strata and features were sampled. Upper fill artifacts were the most intensively sampled because of the high frequencies recovered from the alternating cultural and natural filling episodes. Artifacts recovered from roof fall and floor fill, floor contact, and intramural features were more completely analyzed because these artifacts may have been deposited by structure or site residents during structure use or soon after abandonment. The following discussions are organized by artifact class and analytical components. The analytical components included upper fill, roof fall and floor fill, floor contact, and floor features.

**Ceramics.** Pottery was recovered from and analyzed from all major stratigraphic and feature components. From Structure 1, 2,822 sherds were included in the analysis. Of these, 79 percent are from structure fill, 11 percent are from roof fall and floor fill, 7 percent from floor contact, and 3 percent from floor features. All contexts display a similar distribution of pottery types (Table 11.3) with Middle Rio Grande Plain making up 82 to 92 percent of the assemblages. Decorated pottery, such as San Marcial Black-on-white, always occurs at low frequencies. Interestingly, brown and red wares are more common than decorated pottery. The presence of Alma Plain varieties suggests influence from or contact with Mogollon or southern Anasazi groups to the west and southwest.

Vessel forms are consistently dominated by body sherds of undifferentiated jars (Table 11.4). This broad class subsumes all undecorated Middle Rio Grande Plain body sherds. Vessel form variability is reflected in the occurrence of bowl rims and body sherds, a canteen rim, cloud blowers, and a seed jar rim.

Table 11.3. Ceramic Type Distributions for SU 1, Structure 1

	Comp 500: None Assigned D!	SU 1: Upper Fill	SU 1: Roof Fall	SU 1: Structure Floor Contact	SU 1: Infant Burial, Upper Fill	SU 1: All Floor Features
Unpainted undifferentiated	-	1 0.00%	-	-	-	-
NRG Indeterminate organic paint	-	-	1 0.30%	-	-	-
Wiyó B/W	-	-	1 0.30%	-	-	-
NRG Mudware	-	13 0.60%	1 0.30%	2 1.00%	1 20.00%	2 2.50%
MRG Plain rim	-	37 1.70%	15 4.90%	1 0.50%	-	1 1.20%
MRG Plain body	11 91.70%	1930 87.20%	255 82.50%	176 87.10%	4 80.00%	76 93.80%
MRG Wide Neckbanded	-	1 0.00%	-	-	-	-
MRG Plain Corrugated	-	-	1 0.30%	-	-	-
MRG Unfired Plain Grayware	-	3 0.10%	-	8 4.00%	-	2 2.50%
MRG Unpainted undifferentiated	-	38 1.70%	1 0.30%	3 1.50%	-	-
Mineral Paint undifferentiated	-	15 0.70%	-	1 0.50%	-	-
San Marcial B/w	1 8.30%	18 0.80%	-	-	-	-
Local Red Slipped Red on Buff	-	1 0.00%	-	-	-	-
WMR slipped red over white paste (Tallahogan-like)	-	65 2.90%	16 5.20%	7 3.50%	-	-
Slipped over red paste	-	7 0.30%	-	-	-	-
Jornada Brown body	-	13 0.60%	-	-	-	-
Mogollon Red-on-brown	-	1 0.00%	-	1 0.50%	-	-
Indeterminate Painted brown ware	-	2 0.10%	-	-	-	-
San Francisco Red	-	7 0.30%	4 1.30%	1 0.50%	-	-
Alma Plain rim	-	1 0.00%	-	-	-	-
Alma Plain body	-	51 2.30%	8 2.60%	2 1.00%	-	-
Alma Scored	-	9 0.40%	6 1.90%	-	-	-
Total	12 100.00%	2213 100.00%	309 100.00%	202 100.00%	5 100.00%	81 100.00%

NRG = Northern Rio Grande; MRG; Middle Rio Grande; WMR - White Mountain Redware; B/w = Black-on-white

Table 11.4. LA 265, Structure 1, Vessel Form Distribution

	SU 1: Upper Fill	SU 1: Roof Fall	SU 1: Structure Floor Contact	SU 1: Infant Burial, Upper Fill	SU 1: All Floor Features	Total
Indeterminate	27 1.20%	5 1.60%	27 13.40%	1 20.00%	-	60 2.10%
Bowl rim	9 0.40%	3 1.00%	-	-	-	12 0.40%
Bowl body	33 1.50%	1 0.30%	1 0.50%	-	-	35 1.20%
Olla rim	-	1 0.30%	1 0.50%	-	-	2 0.10%
Jar neck	216 9.80%	52 16.80%	29 14.40%	-	3 3.70%	300 10.70%
Jar rim	42 1.90%	14 4.50%	-	-	-	56 2.00%
Jar body	1870 84.50%	228 73.80%	141 69.80%	4 80.00%	73 90.10%	2316 82.40%
Jar body with strap or coil handle	-	1 0.30%	-	-	-	1 0.00%
Jar body with lug handle	4 0.20%	2 0.60%	1 0.50%	-	-	7 0.20%
Indeterminate coil/strap handle	5 0.20%	-	-	-	-	5 0.20%
Canteen rim	-	1 0.30%	-	-	-	1 0.00%
Miniature pinch pot body	-	1 0.30%	1 0.50%	-	-	2 0.10%
Cloud blower	-	-	-	-	2 2.50%	2 0.10%
Seed jar rim	1 0.00%	-	1 0.50%	-	-	2 0.10%
Indeterminate rim	6 0.30%	-	-	-	3 3.70%	9 0.30%
	2213	309	202	5	81	2810

Additional vessel form variability for Early Developmental period assemblages is reflected in mortuary goods, which include pitchers, canteens, and seed jars as well. The majority of the Middle Rio Grande Plain body sherds lack exterior modification suggesting that they were primarily service and storage vessels. Exterior sooting and interior wear, which reflect cooking, combine for 11.5 percent of all sherds. Floor contact sherds have the greatest proportion of cooking wear (57 percent) perhaps reflecting terminal domestic activities.

**Lithic and Ground Stone Artifacts.** A total of 915 chipped stone and ground stone artifacts were analyzed from Structure 1 contexts. The

following summaries describe material type distributions, artifact class distributions, and functional and technological aspects of each subassemblage.

Three hundred and fifty lithic artifacts were recovered from the upper fill in Structure 1. Chalcedony (50 percent) and nonvesicular igneous materials (27 percent) made up the majority of the assemblage. Chert (11 percent) and Jemez obsidian (8 percent) followed in frequency. Low frequencies of quartzite ( $n = 7$ ), vesicular igneous ( $n = 4$ ), "other" igneous ( $n = 2$ ), and sandstone ( $n = 1$ ) were also recovered (Table 11.5).

The assemblage composition indicates an emphasis on later stages of secondary core



Table 11.5. LA 265, SU 1, Structure 1, Upper Fill, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	23	53.5	7	16.3	1	2.3	3	7.0	9	20.9	-	-	-	-	-	-	43
Flake	140	52.8	28	10.6	3	1.1	21	7.9	73	27.5	-	-	-	-	-	-	265	75.0
Tested Rock	1	33.3	1	33.3	1	33.3	-	-	-	-	-	-	-	-	-	-	3	<1
Core, Multiplatform	9	81.8	-	-	-	-	-	-	2	18.2	-	-	-	-	-	-	11	3.0
Hammerstone	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Flake, Marginal Retouch	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Projectile Point	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-	2	<1
Biface	1	20.0	1	20.0	-	-	3	60.0	-	-	-	-	-	-	-	-	5	1.0
Unknown Ground Stone	-	-	-	-	1	14.3	-	-	4	57.1	1	14.3	1	14.3	-	-	7	2.0
Mano, Unknown	-	-	-	-	1	33.3	-	-	-	-	2	66.7	-	-	-	-	3	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	33.3	1	33.3	1	33.3	3	<1
Expedient Handstone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Total	175	50.0	38	10.9	7	2.0	29	8.3	94	26.9	4	1.1	2	0.6	1	0.3	350	100.0

reduction with 74 percent of whole flakes lacking dorsal cortex. The relative lack of primary flakes (n = 4) indicate that decortication occurred at another location. Eleven multiplatform cores were recovered from the fill; nine were manufactured from chalcedony and two from nonvesicular igneous materials. Multiplatform cores are consistent with core flake production for informal, daily use tools. A quartzite hammerstone was also retrieved and may remain from ground stone tool maintenance and production or hard-hammer percussion for core flake detachment. Evidence of bifacial tool manufacture is low in frequency and confined to the Jemez obsidian material category.

Unutilized flakes (75 percent) and unutilized small angular debris (12 percent) make up the majority of the lithic assemblage. The tool assemblage exhibits considerable variability. Ten chipped stone tools and twelve ground stone implements are represented. Five expedient flake tools were used for cutting (n = 4) and scraping (n = 1) activities. The tools were manufactured from Jemez obsidian, nonvesicular igneous materials, and "other" local materials. The use-wear patterns are consistent with working a hard media like bone or wood. Two edges exhibit bidirectional rounding and striations resulting from prolonged use. These tools were utilized and discarded at the site when they were no longer functional.

In addition to the five expedient flake

tools, three marginally retouched tools were also recovered. Two of these tools were manufactured from chalcedony and nonvesicular igneous materials and both exhibited unidirectional retouch but no evidence of use. Because edge modification appears incomplete, it is likely that these artifacts were broken during manufacture and discarded. The third marginally retouched tool exhibited unidirectional retouch and wear patterns typical of scraping on bone or wood. Formal tools included two obsidian bifaces and a fragment of an obsidian projectile point. The presence of an obsidian flake with a retouched platform indicates that these tools may have been manufactured near this location. One biface exhibits bidirectional cutting wear consistent with prolonged use on bone or wood. The other biface was broken and lacked evidence of wear. The medial portion of a projectile point was also recovered.

Seventeen ground stone artifacts, representing twelve ground stone implements, were recovered from the upper fill in Study Unit 1. Three indeterminate mano fragments represent two individual manos: one manufactured from medium-grained quartzitic sandstone and the other vesicular rhyolite. A whole two-hand mano was manufactured from basalt. Three indeterminate metate fragments represent three individual metates: one manufactured from vesicular basalt, another from "other" igneous, and one from fine-grained

Table 11.6. LA 265, Structure 1, Roof Fall, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	8	47.1	3	17.6	-	-	1	5.9	5	29.4	-	-	-	-	17	13.0
Flake	41	42.3	21	21.6	3	3.1	3	3.1	29	29.9	-	-	-	-	97	77.0
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	1	33.3	-	-	1	33.3	-	-	1	33.3	-	-	-	-	3	2.0
Flake, Marginal Retouch	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Uniface	1	100.0	-	-	-	-	-	-	-	-	-	-	-	1	<1	
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Mano, One-Hand	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	1	33.3	-	-	2	66.7	3	2.0
Total	52	41.6	24	19.2	4	3.2	4	3.2	38	30.4	1	0.8	2	1.6	125	100.0

sandstone. An expedient rhyolitic handstone and two fragments of a shaped slab were also recovered. One whole artifact and six fragments of indeterminate ground stone were recovered from the upper fill. The whole indeterminate artifact was manufactured from scoria. The six fragments represent a minimum of three additional ground stone artifacts.

**Structure 1, Roof Fall.** One hundred and twenty-five lithic artifacts were recovered from the roof fall in Study Unit 1 (Table 11.6). All artifacts were manufactured from locally available materials. The majority of the artifacts were manufactured from chalcedony (42 percent), nonvesicular igneous materials (30 percent), and chert (19 percent). Material categories that exhibit low frequencies are Jemez obsidian (n = 4), quartzite (n = 4), vesicular igneous materials (n = 1), and sandstone (n = 2).

The assemblage reflects an emphasis on later stages of secondary core reduction: 90 percent of the whole flakes lack dorsal cortex. Only 9 percent of whole flakes exhibit partial dorsal cortex. Seventy-six percent of platforms on flakes are single faceted, also indicating an emphasis on secondary core reduction. Three multiplatform cores, manufactured from chalcedony, quartzite, and nonvesicular igneous materials, were also recovered. No evidence of primary reduction is indicated – it is likely that decortication occurred at either another location at the site or at the raw material source. There are no retouched or prepared platforms or formal tools that would indicate the use or

manufacture of bifacial formal tools.

Unutilized flakes (77 percent) and unutilized small angular debris (13 percent) constitute the majority of the lithic artifact assemblage. Two artifacts indicate both expedient and formal tool manufacture or use. A marginally retouched flake manufactured from non-vesicular igneous materials exhibits unidirectional retouch but lacks evidence of utilization. A chalcedony uniface exhibits unidirectional wear typical of scraping on hard media like bone or wood.

The ground stone assemblage consists of five artifacts representing four ground stone implements. A complete two-hand mano of vesicular igneous material was recovered from the roof fall. Three indeterminate metate fragments represent a minimum of two additional metates: one manufactured from andesite and the other, fine-grained sandstone. An indeterminate stone fragment indicates that another ground stone implement was manufactured from fine-grained rhyolite.

**Structure 1, Floor Contact.** Three hundred and three lithic artifacts were recovered from the floor in Structure 1 (Table 11.7). Nonvesicular igneous materials (41 percent), chalcedony (32 percent), and chert (15 percent) formed the largest portion of the raw materials represented in the provenience. Low frequencies of Jemez obsidian (n = 25), quartzite (n = 7), sandstone (n = 2), and "other" local materials (n = 3) were also present.

The assemblage reflects an emphasis on

Table 11.7. LA 265, SU 1, Structure 1, Floor Contact, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris Flake	8	28.6	7	25.0	1	3.6	1	3.6	11	39.3	-	-	-	-	28	9.2
Flake, Bifacial Thin Core, Multiplatform	85	33.9	36	14.3	5	2.0	17	6.8	106	42.2	-	-	2	0.8	251	82.0
Flake, Utilized	-	-	-	-	-	-	1	50.0	1	50.0	-	-	-	-	2	<1
Flake, Marginal Retouch	3	37.5	1	12.5	-	-	1	12.5	3	37.5	-	-	-	-	8	2.0
Projectile Point	-	-	-	-	-	-	1	20.0	3	60.0	-	-	1	20.0	5	1.0
Biface	1	33.3	-	-	-	-	1	33.3	1	33.3	-	-	-	-	3	<1
Unknown Ground Stone	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Mano, Unknown	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	1	100.0	-	-	-	-	1	100.0	-	-	1	<1
<b>Total</b>	<b>97</b>	<b>32.0</b>	<b>44</b>	<b>14.5</b>	<b>7</b>	<b>2.3</b>	<b>25</b>	<b>8.3</b>	<b>125</b>	<b>41.3</b>	<b>2</b>	<b>0.7</b>	<b>3</b>	<b>1.0</b>	<b>303</b>	<b>100.0</b>

later stages of secondary core reduction—78 percent of whole flakes lack dorsal cortex and 14 percent exhibit partial dorsal cortex. Platform types also indicate an emphasis on secondary core reduction with single-faceted platforms on 49 percent of the flakes with platforms. The assemblage appears to indicate that primary reduction also occurred within the structure. Seven percent of the chalcedony flakes were primary (n = 4) exhibiting 100 percent dorsal cortex. This material category also exhibited cortical platforms on 27 percent of flakes with platforms.

The nonvesicular igneous material category indicates that primary core reduction as well as tertiary bifacial tool manufacture occurred in the structure. Three flakes had 100 percent dorsal cortex and one flake had a retouched or prepared platform. An obsidian flake with a retouched or prepared platform also indicates that bifacial tool manufacture occurred in the structure.

Unutilized flakes (82 percent) and unutilized small angular debris (9 percent) constitute the majority of the lithic artifact assemblage. Both expedient and formal tools were recovered. Three flakes exhibit unidirectional marginal retouch, while one exhibits unidirectional wear patterns typical of scraping on hard media like bone or wood, the other two lack evidence of utilization. The chalcedony flake exhibited a functionally complete edge and may have been used in an activity that does not result in wear that can be identified using 60x magnification. The other tool lacked a function-

ally complete edge possibly breaking during manufacture. Five expedient utilized flakes, manufactured from Jemez obsidian (n = 1), nonvesicular igneous material (n = 3), and "other" local material (n = 1) were also recovered. Four of these tools exhibit bidirectional wear resulting from cutting or sawing, and one exhibits unidirectional scraping wear—all tools were used on hard media like bone or wood. A projectile point fragment, a biface fragment, and a complete biface were also recovered from the floor—all were manufactured from obsidian. The complete biface exhibited bidirectional rounding and striations typically resulting from prolonged knife use on bone or wood. The fragment lacked evidence of utilization.

Three ground stone fragments, representing three different grinding implements, were recovered from the floor contact in Structure 1. An indeterminate mano was manufactured from medium-grained sandstone and an indeterminate metate was made from quartzitic sandstone. A third fragment of indeterminate ground stone, made from fine-grained sandstone, represents a third grinding implement.

**Structure 1, Floor Features.** One hundred and eighteen lithic artifacts were recovered from the floor features in Structure 1 (Table 11.8). The majority of the assemblage consisted of chert (34 percent), chalcedony (30 percent), Jemez obsidian (18 percent), and nonvesicular igneous materials (14 percent). Quartzite made up only 5 percent of the assemblage.

Table 11.8. SU 1, Structure 1, All Floor Features, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	5	55.6	1	11.1	-	-	-	-	3	33.3	9	7.0
Flake	29	40.8	19	26.8	4	5.6	7	9.9	12	16.9	71	60.0
Flake, Bifacial Thin	-	-	18	56.3	-	-	14	43.8	-	-	32	27.0
Core, Multiplatform	-	-	2	100.0	-	-	-	-	-	-	2	1.0
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	1	<1
Flake, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	1	<1
Mano, Unknown	-	-	-	-	1	100.0	-	-	-	-	1	<1
Metate, Trough	-	-	-	-	-	-	-	-	1	100.0	1	<1
Total	35	29.7	40	33.9	6	5.1	21	17.8	16	13.6	118	100.0

The combined assemblage indicates an emphasis on later stages of secondary core reduction; 80 percent of whole flakes lack dorsal cortex. Only nine flakes exhibit dorsal cortex. The majority of platforms were either single faceted (34 percent) or collapsed (34 percent). The number of chert (n = 18) and obsidian (n = 14) bifacial thinning flakes indicate that bifacial tools were manufactured in the structure. Seven of these flakes also exhibit bidirectional retouched platforms typical of tertiary formal tool manufacture. Two multiplatform cores were manufactured from chert and a quartzite hammerstone was also recovered.

Unutilized flakes (60 percent) and unutilized small angular debris (7 percent) made up the majority of the assemblage. The rest of the chipped stone assemblage consists of a single marginally retouched chalcedony flake fragment. The flake exhibits bidirectional retouch and wear patterns typical of cutting on hard media like bone or wood. The functional edge was not complete indicating that it was used, broken, and discarded in Structure 1. The lack of formal chert and obsidian tools, yet abundance of evidence for bifacial tool manufacturing, indicates that bifacial tools were manufactured within the structure and transported to another location for use.

Two ground stone implements are represented in the ground stone assemblage. These items consist of an indeterminate mano fragment manufactured from medium-grained quartzite and a trough metate fragment manufactured from basalt.

#### Fauna

A total of 1,519 faunal specimens were analyzed from Structure 1. Upper fill and roof fall contexts were sampled, while all recovered from floor features and contact were analyzed. Frequency distribution by context is presented in Table 11.9.

**Structure 1, Upper Fill.** Five hundred and twenty-eight animal bones were analyzed from the upper fill. Most of the specimens were less than 25 percent complete and 24 percent exhibited evidence of burning, suggesting post-pit-house occupation processing and consumption. Diversity as indicated by the number of individual species is high and very similar to the roof fall distribution suggesting that there may be stratigraphic overlap for the strata. Dominated by small mammals, primarily desert cottontail, 35.2 percent of the assemblage were medium and large mammal bones. The range of species indicates that a variety of environmental zones were exploited with an emphasis and grass land and field areas. The occurrence of a domesticated sheep/goat indicates that upper elevations may have accumulated low frequency deposits from historic period use of the terrace. Two bone awl fragments and a striated deer metatarsal fragment indicate that some upper fill deposits were derived from domestic refuse deposition following Structure 1 abandonment. Two dog burials, Features 20 and 21 were interred in the

Table 11.9. LA 265, Summary of Fauna from SU 1, Structure 1, Fill and Floor Contact

	Upper Fill		Infant Burial: Upper Fill		Dog Burials: Upper Fill		Human Burial: Lower Fill		Roof Fall		Floor Contact		Vent Shaft to Structure 1		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Unknown small	-	-	-	-	-	-	-	-	-	-	-	-	1	0.4%	1	0.1%
Small mam/med-lrg bird	1	0.2%	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1%
Small mammal	137	25.9%	31	37.8%	19	24.7%	29	27.1%	29	15.9%	55	19.9%	108	40.6%	408	26.9%
Small-medium mammal	19	3.6%	15	18.3%	2	2.6%	-	-	3	1.6%	4	1.4%	13	4.9%	56	3.7%
Medium-large mammal	50	9.5%	3	3.7%	4	5.2%	19	17.8%	16	8.8%	9	3.2%	-	-	101	6.6%
Large mammal	41	7.8%	1	1.2%	-	-	17	15.9%	13	7.1%	23	8.3%	3	1.1%	98	6.5%
Black-tailed prairie dog	-	-	-	-	-	-	-	-	1	0.5%	-	-	-	-	1	0.1%
Gunnison's prairie dog	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-	1	0.1%
Botta's pocket gopher	-	-	-	-	1	1.3%	-	-	-	-	2	0.7%	-	-	3	0.2%
Yellow-faced pocket gopher	20	3.8%	-	-	-	-	2	1.9%	-	-	1	0.4%	-	-	23	1.5%
Banner-tailed kangaroo rat	-	-	-	-	2	2.6%	-	-	1	0.5%	-	-	7	2.6%	10	0.7%
Woodrats	7	1.3%	1	1.2%	-	-	-	-	-	-	1	0.4%	-	-	9	0.6%
White-throated woodrat	1	0.2%	-	-	-	-	-	-	1	0.5%	4	1.4%	-	-	6	0.4%
Small rodent	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-	1	0.1%
Medium to large rodent	1	0.2%	3	3.7%	1	1.3%	1	0.9%	-	-	-	-	3	1.1%	9	0.6%
Desert cottontail	109	20.6%	13	15.9%	28	36.4%	23	21.5%	67	36.8%	90	32.5%	90	33.8%	420	27.6%
Black-tailed jack rabbit	38	7.2%	11	13.4%	12	15.6%	4	3.7%	29	15.9%	63	22.7%	35	13.2%	192	12.6%
Large carnivore	-	-	-	-	5	6.5%	-	-	-	-	-	-	-	-	5	0.3%
Dog, coyote, wolf	-	-	-	-	-	-	1	0.9%	-	-	-	-	-	-	1	0.1%
Dog	-	-	-	-	2**	2.6%	-	-	1	0.5%	1	0.4%	-	-	4	0.3%
Badger	-	-	-	-	-	-	-	-	1	0.5%	-	-	-	-	1	0.1%
Bobcat	1	0.2%	-	-	1	1.3%	-	-	-	-	-	-	-	-	2	0.1%
Medium artiodactyl	64	12.1%	-	-	-	-	6	5.6%	7	3.8%	5	1.8%	-	-	82	5.4%
Large artiodactyl	-	-	1	1.2%	-	-	-	-	-	-	-	-	-	-	1	0.1%
Elk	3	0.6%	-	-	-	-	-	-	1	0.5%	-	-	-	-	4	0.3%
Mule deer	17	3.2%	-	-	-	-	1	0.9%	1	0.5%	1	0.4%	-	-	20	1.3%
Pronghorn	5	0.9%	-	-	-	-	-	-	2	1.1%	-	-	-	-	7	0.5%
Mountain sheep	5	0.9%	-	-	-	-	1	0.9%	4	2.2%	-	-	-	-	10	0.7%
Sheep or goat	1	0.2%	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1%
Medium bird	-	-	-	-	-	-	-	-	1	0.5%	-	-	-	-	1	0.1%
Large bird	2	0.4%	-	-	-	-	-	-	-	-	-	-	-	-	2	0.1%
Turkey	3	0.6%	-	-	-	-	-	-	3	1.6%	-	-	-	-	6	0.4%
Horned lark	1	0.2%	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1%
Passeriformes	-	-	-	-	-	-	-	-	1	0.5%	3	1.1%	2	0.8%	6	0.4%
Lizards	-	-	1	1.2%	-	-	-	-	-	-	-	-	-	-	1	0.1%
Nonvenomous snakes	2	0.4%	-	-	-	-	1	0.9%	-	-	11*	4.0%	-	-	14	0.9%
Frogs and toads	-	-	-	-	-	-	-	-	-	-	1	0.4%	-	-	1	0.1%
True toads	-	-	-	-	-	-	-	-	-	-	-	-	1*	0.4%	1	0.1%
cf. Great plains toad	-	-	-	-	-	-	-	-	-	-	1*	0.4%	-	-	1	0.1%
Plains or Woodhouse's toad	-	-	2**	2.4%	-	-	-	-	-	-	-	-	-	-	2	0.1%
cf. Woodhouse toad	-	-	-	-	-	-	-	-	-	-	2	0.7%	2**	0.8%	4	0.3%
cf. Rio Grande leopard frog	-	-	-	-	-	-	-	-	-	-	-	-	1*	0.4%	1	0.1%
Total	528	100.0%	82	100.0%	77	100.0%	107	100.0%	182	100.0%	277	100.0%	266	100.0%	1519	100.0%
Fetal, neonate	3	0.6%	-	-	-	-	-	-	-	-	-	-	-	-	3	0.2%
Immature (1/2-2/3 grown)	2	0.4%	-	-	7	9.1%	-	-	1	0.5%	1	0.4%	1	0.4%	12	0.8%
Burned	127	24.0%	12	14.6%	10	13.0%	5	4.7%	31	17.0%	20	7.2%	41	15.4%	248	16.3%
Complete	43	8.1%	10	12.2%	7	9.1%	6	5.6%	12	6.6%	43	15.5%	27	10.2%	148	9.7%
>75% complete	15	2.8%	1	1.2%	8	10.4%	-	-	8	4.4%	11	4.0%	3	1.1%	46	3.0%
50-75% complete	19	3.6%	1	1.2%	6	7.8%	-	-	10	5.5%	9	3.2%	3	1.1%	48	3.2%
25-50% complete	65	12.3%	6	7.3%	11	14.3%	9	8.4%	39	21.4%	32	11.6%	34	12.8%	196	12.9%
<25% complete	386	73.1%	64	78.0%	45	58.4%	92	86.0%	113	62.1%	182	65.7%	199	74.8%	1081	71.2%

upper fill. These burials reinforce the interpretation that Structure 1 continued use as a disposal feature by a later, but temporally related domestic occupation.

**Structure 1, Roof Fall.** One hundred and thirteen animal bones were analyzed from roof fall. Most of the specimens were less than 25 percent complete and 17 percent exhibited evidence of burning, suggesting post-pithouse occupation processing and consumption. Diversity as indicated by the number of individual species is high and very similar to the roof fall distribution suggesting that there may be stratigraphic overlap for the strata. Dominated by small mammals, primarily desert cottontail, 26 percent of the assemblage were medium and large mammal bones, as well. Badger was recovered from roof fall only. The range of species indicates a wide range of environmental zones were exploited with an emphasis on grassland and field areas.

**Structure 1, Floor.** Two hundred and seventy-seven animal bones were analyzed from floor contact. With more than double the frequency recovered from roof fall, the floor assemblage displayed limited diversity. Containing species that might have inhabited the structure, immediately after its abandonment, the floor contact is dominated by small mammal bones (79 percent, not including birds and reptiles). Seven percent burning suggests minimal cooking or roasting discard. Most of the bone may have been deposited soon after domestic occupation ceased. There is little evidence to support an association between the faunal assemblage and household activities.

**Structure 1, Floor Features.** None of the floor features has appreciable amounts of bone and most consist of small unidentifiable fragments (Table 11.10). One piece from Feature 118 is from a flotation sample. There is not much to say about the individual feature assemblages. The ash pit (Feature 110) has quite a diverse assemblage: the badger part is the proximal end of a radius, completely calcined. Feature

117, a heating pit, has all cottontails. Parts are diverse and mostly axial along with a radius and rear foot bones. Only the innominate is lightly scorched. Feature 119 has one of the larger samples, consisting primarily of rabbits. The body parts are again diverse ranging from head to toe with some burning for each species. The same is true for Feature 220, a larger sample with a lot of rabbit. Cottontail counts in this feature are somewhat deceptive: 18 are cranial pieces. All three cottontail tibias from this pit have scorched distal ends from roasting. The rabbit bone from floor features is more suggestive of processing and consumption than floor context bone. Some bone may have entered features through intramural maintenance.

#### *Miscellaneous Artifacts*

Structure 1 yielded few miscellaneous artifacts including shell and minerals, such as turquoise and ocher. Upper fill and roof fall yielded eight pieces of turquoise and two possible bead or pendant fragments. Other minerals included red ocher, yellow pigmented sand or sandstone, and gray-brown very fine sandstone. Floor contact and floor contexts feature turquoise, mudstone, claystone, and various friable samples of quartz and sand/sandstone. Some of the non-turquoise items may have been used as pottery temper.

Structure 1 upper fill and roof fall yielded 15 fragments and 1 bead/pendant fragment of *Anodonta californiensis*. The co-occurrence of shell and turquoise in upper fill could reflect periodic household activity area maintenance with small fragments of lapidary debris intermixing with other household debris, all of which was deposited in the Structure 1 depression. It is also possible that shell and turquoise fragments were intentionally and periodically deposited into the Structure 1 depression as part of monitored or maintained abandonment. Ethnographically, it has been shown that modern Pueblo Indians mix small fragments of mineral or natural objects with corn meal that is distributed throughout the pueblo by votive practices.

Table 11.10. LA 265, Summary of Fauna from SU 1, Floor Features

	Feature 102		Feature 104		Feature 107		Feature 108		Feature 110		Feature 113	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	1	100.0%	2	50.0%	3	50.0%	1	50.0%	5	25.0%	4	50.0%
Small to medium mammal	-	-	-	-	-	-	-	-	-	-	-	-
Medium to large mammal	-	-	-	-	1	16.7%	-	-	6	30.0%	1	12.5%
Large mammal	-	-	-	-	-	-	-	-	1	5.0%	-	-
Woodrats	-	-	1	25.0%	-	-	-	-	-	-	-	-
cf. Bushy-tailed woodrat	-	-	-	-	-	-	-	-	1	5.0%	-	-
Medium to large rodent	-	-	-	-	1	16.7%	-	-	-	-	-	-
Desert cottontail	-	-	1	25.0%	1	16.7%	1	50.0%	4	20.0%	3	37.5%
Black-tailed jack rabbit	-	-	-	-	-	-	-	-	2	10.0%	-	-
Badger	-	-	-	-	-	-	-	-	1	5.0%	-	-
Total	1	100.0%	4	100.0%	6	100.0%	2	100.0%	20	100.0%	8	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Burned	1	100.0%	-	-	-	-	1	50.0%	3	15.0%	2	25.0%
Complete	-	-	-	-	1	16.7%	-	-	2	10.0%	-	-
>75% complete	-	-	-	-	-	-	-	-	1	5.0%	-	-
50-75% complete	-	-	1	25.0%	-	-	-	-	-	-	-	-
25-50% complete	-	-	1	25.0%	-	-	1	50.0%	4	20.0%	-	-
<25% complete	1	100.0%	2	50.0%	5	83.3%	1	50.0%	13	65.0%	8	100.0%

Table 11.10. Continued.

	Feature 117		Feature 118		Feature 119		Feature 120		Feature 191		Feature 220		Feature Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	2	100.0%	24	45.3%	1	25.0%	8	36.4%	11	16.2%	62	30.1%
Small to medium mammal	-	-	-	-	-	-	-	-	-	-	1	1.5%	1	0.5%
Medium to large mammal	-	-	-	-	2	3.8%	1	25.0%	2	9.1%	-	-	13	6.3%
Large mammal	-	-	-	-	-	-	-	-	1	4.5%	-	-	2	1.0%
Woodrats	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5%
cf. Bushy-tailed woodrat	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5%
Medium to large rodent	-	-	-	-	-	-	-	-	-	-	1	1.5%	2	1.0%
Desert cottontail	16	100.0%	-	-	15	28.3%	2	50.0%	9	40.9%	49	72.1%	101	49.0%
Black-tailed jack rabbit	-	-	-	-	12	22.6%	-	-	2	9.1%	6	8.8%	22	10.7%
Badger	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5%
Total	13	100.0%	2	100.0%	53	100.0%	4	100.0%	22	100.0%	68	100.0%	206	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Burned	1	6.3%	-	-	11	20.7%	1	25.0%	6	27.3%	4	5.9%	30	14.6%
Complete	5	31.3%	-	-	3	5.7%	1	25.0%	-	-	3	4.4%	15	7.3%
>75% complete	-	-	-	-	2	3.8%	-	-	-	-	2	2.9%	5	2.4%
50-75% complete	2	12.5%	-	-	3	5.7%	-	-	1	4.5%	9	13.2%	16	7.8%
25-50% complete	4	25.0%	-	-	14	26.4%	1	25.0%	1	4.5%	10	14.7%	36	17.5%
<25% complete	5	31.3%	2	100.0%	31	58.5%	2	50.0%	20	90.9%	44	64.7%	134	65.0%

Seven shell artifacts were recovered from floor features, Features 200, 220, 238, and 236. Six are *Anodonta californiensis* and one was undifferentiated shell. All are saltwater shells that could have come from the Gulf of California. The shell artifact from Feature 220 is a bead. Marine shells are common in all Pueblo periods. They reflect long distance, but very low intensity trade connections. These items probably filter through the large areal Basketmaker III socio-economic network that was fluid and open, at least into the AD 900s.

### Summary

Structure 1 was an oblate-shaped, deep pit structure occupied during the early to late 800s. Thirty-nine intramural features, including three oblong floor drum pits encircling the large central hearth, suggest intensive use of the structure for domestic and perhaps ritual purposes. With a floor area of 38.31 sq m, it was the largest of the Peña Blanca households and could have accommodated seven to ten individuals comfortably for daily living. The majority of the subfloor pits were in the structure's east half with most of the pits having small, easily capped or covered openings, allowing a temporary increase in available floor space. Most of the pits were functionally undifferentiated to the archaeologists with the absence of ancillary thermal features, unusual for Peña Blanca structures.

Thirty-nine floor features were identified within Structure 1, including a central fire hearth and two subsidiary warming pits, three possible foot drums, a ventilator complex, roof support postholes, and various other subfloor pits, many of indeterminate function. A single adult human burial, and two articulated dog burials were also encountered in the post-abandonment fill. These and other features are described in Table 11.2.

The size, depth, and presence of at least one intramural hearth suggests that Structure 1 was occupied during cold weather, if not year-round. Deep pit structures have high insulative properties and their internal temperature can

be kept at a habitable level with minimal thermal heating. Cold weather occupation could include winter, early spring, and late fall. Just as the pit structure holds thermal heat, it would also insulate from solar heat during the warmest times of the year. Therefore, pit structure depth is not necessarily a good indicator of cold weather occupation. The absence of the ancillary hearths and large, intramural storage pits combined with the large and abundant extramural features in Study Unit 2 indicate a distinct indoor-outdoor activity pattern that is consistent with year-round occupation.

The hearth/ash pit/ventilator complex was aligned to the east/southeast with no sipapu evident to the west of the hearth. East orientation was fairly common in Early Developmental Rio Grande pit structures (Lakatos 2000; Schmader 1994). While Structure 1 clearly functioned primarily as a domestic structure, the presence of foot drum pits and the oversized adobe-lined hearth suggest occasional ritual activities. Foot drums encircling the central hearth is not a common occurrence in Anasazi or Mogollon pit structures, but they do occur (Bullard 1953).

Abandonment was gradual and noncatastrophic. The uncovered pithouse was gradually filled by natural processes and served as a receptacle for domestic refuse. Dog and human burials encountered in the fill indicated use as a mortuary or cemetery. Scattered occurrences of shell and turquoise may indicate monitored or ritualized abandonment through the deposition of votive or offertory objects.

## STUDY UNIT 2

Study Unit 2 is an extramural activity area surrounding Study Unit 1, a large Early Developmental pit structure. The area encompassed grid coordinates 450N to 473N, and from 488E to 510E (Fig. 11.2), a variety of extramural features and facilities, including two possible shallow pit structures, three extramural hearths with associated fire-cracked rock scatters, four large bell-shaped storage pits (three with intrusive human burials), a fourth



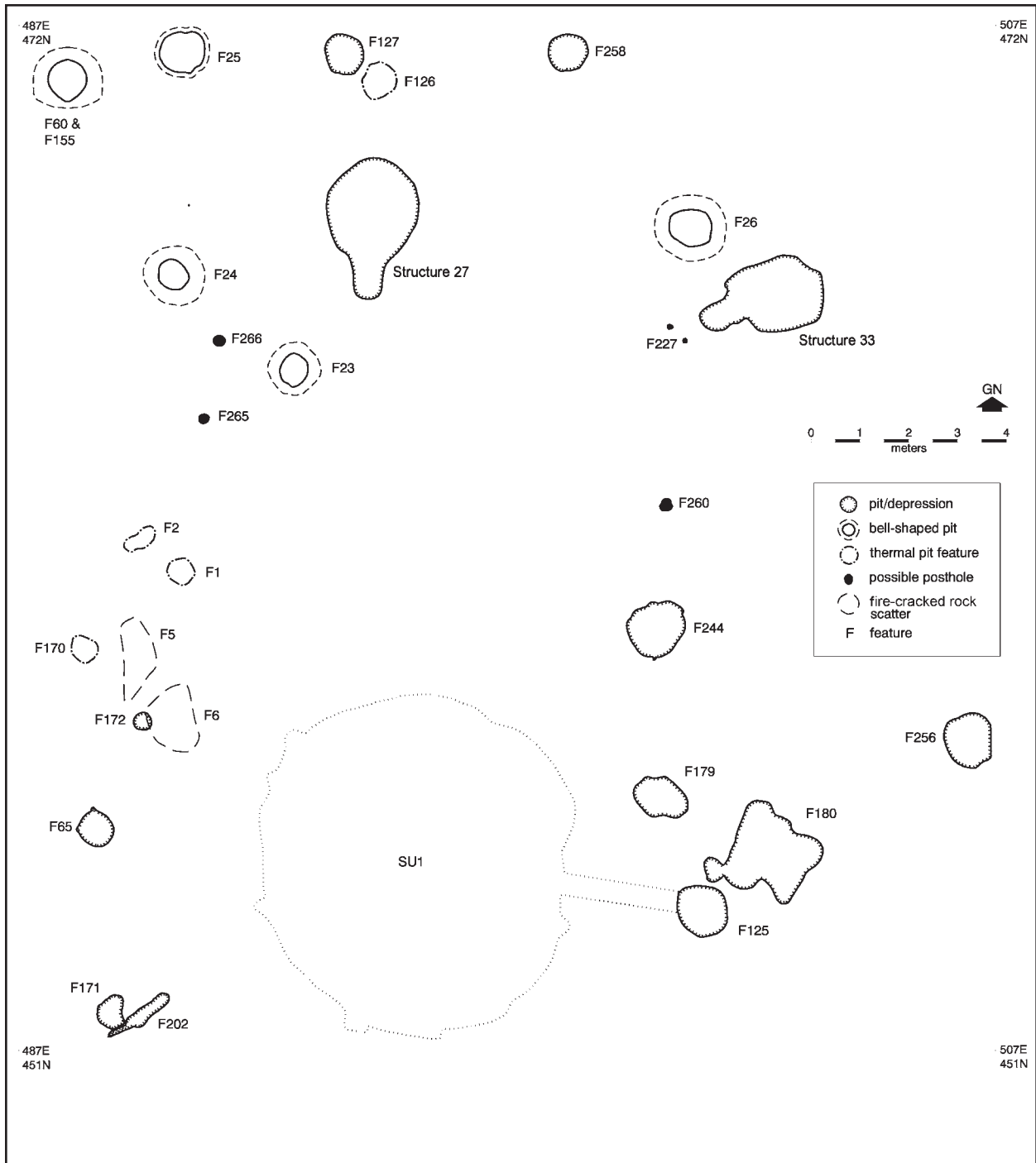


Figure 11.11. Study Unit 2, plan view.

human burial in a shallow surface pit, and a variety of other pits, large and small, many of indeterminate function (Fig. 11.11). A total of 43 cultural features were assigned to the study unit, and these are described in *Table 11.11*.

#### *Excavation Procedures*

Excavation in this area began early in the project, as Study Unit 1 was being defined as a pit-house. A few fire-cracked rocks had been noted near the western edge of the right-of-way, and a block of 20 1-by-1-m grid units at 489-462N/489-492E were excavated. These units were dug in one to three arbitrary 10-cm levels, through the loose eolian sands and slightly into the sterile Bk stratum. One unit was excavated six levels, deep into the Bk, to determine if it was as sterile as expected. It was. Six features were found in this area, five in the upper sands and one, Feature 172, originating in the Bk stratum. Four of the upper features (Features 1, 2, 5, and 6) were excavated prior to mechanical scraping. Mechanical scraping began at the E489 grid line and continued east. Feature 170 was located on the 488E grid line and was not found until the area west of 489E was scraped, much later in the project.

Four 2-by-2-m test units were excavated in the northern portion of the study unit. These units, excavated to test the upper sands, were given individual designations: Study Units 5, 6, 7, and 8 (Fig. 11.1). Use of these designations for identifying spatial locales within the site was subsequently discontinued, and all the extramural features to the north of Study Unit 1 were encompassed by the Study Unit 2 designation. The artifact densities in these larger units and the 1-by-1-m grid units were quite high, leading to the assumption that similar densities would be found in the upper sands throughout Study Unit 2. Features 1, 2, 5, and 6 were discovered during hand excavation of the grid units. After excavation of the grid units was completed, a backhoe was brought in to remove the sands, carefully monitored at all times. As the sterile light brown Bk stratum

was exposed, all of the other features described here stood out in sharp contrast.

#### *Structure 27*

Structure 27 is a "key-hole" shaped semisubterranean pit structure located 8 m north of Study Unit 1 (Fig. 11.12). This structure is oval in outline shape, measuring 220-by-188 cm, with a subrectangular protrusion at its southern end that may have served as an entrance.

#### *Excavation Procedure and Stratigraphy*

The feature was first defined as an oval outline of darker soil during the mechanical surface stripping phase of excavation, and was bisected from north to south by excavating the eastern portion in natural stratigraphic units. Once the fill profile was documented, the western portion of the structure was also excavated in natural stratigraphic units. Stratum 1 was the uppermost 5 cm of fill, representing infilling from the surrounding ground surface after abandonment of the site area. Stratum 2 was a hard layer of compacted dark gray fill between 5 and 18 cm below the ground surface containing a few lithic artifacts. Stratum 3 was a 30-cm-thick layer of dark gray midden fill lying on the floor of the feature that contained a large number of lithics, ceramics, bone fragments, burned cobbles and fire-cracked rock, and ground stone. The cobbles and fire-cracked rock were found concentrated in the vicinity of the entrance in the southern portion of the feature (Fig. 11.14).

#### *Structure Description*

Structure 27 is a "key-hole" shaped semisubterranean pit structure located 8 m north of Study Unit 1 (Fig. 11.11). This structure is oval in outline, measuring 220 by 188 cm, with a subrectangular protrusion at its southern end, which may have served as an entrance. It had ten intramural features including a hearth, two small storage pits, four postholes, and three possible pot rests.

Table 11.11. Study Unit 2 Features

Feature Number	Feature Type	Location (center point)	Dimensions L / W / D (in cm)	Outline Shape	Fill	Contents	Comments
1	cobble-filled thermal pit	N 460.83 E 490.30	54 x 49 x 14	oval	10YR2/2 very dark brown sandy loam with light charcoal flecking and bits of burned soil	5 lithics & charcoal, 7 complete cobbles weighing 5.5 kg, 6 cobbles cracked in situ weighing 4 kg, 25 fire-cracked rock fragments weighing 12.5 kg; additional lithics, ceramics and bone recovered from the surrounding matrix.	1-ca. 4 m northwest of Study Unit 1; shallow basin shaped hearth lined with cobbles, oxidation noted on floor between cobbles.
2	cobble-filled thermal pit	N 461.50 E 489.54	70 x 36 x 10	oval	10YR3/4 dark yellowish brown sandy loam with bits of burned soil - no charcoal noted	6 lithics, 1 bone fragment, 9 cobbles (some of which were fire cracked) weighing 4 kg; additional lithics, ceramics and a projectile point recovered from the surrounding matrix.	2- ca. 5 m northwest of Study Unit 1; shallow basin shaped hearth with few cobbles and fire-cracked rock, no oxidation noted.
5	fire-cracked rock thermal feature	N 459.10 E 489.50	90 x 65 x 10	oval	no fill (feature was deflated)	42 cobbles and fire-cracked rock weighing 10 kg (5 cobbles were complete and 1 was cracked in situ); lithics, ceramics and 1 bone fragment collected from the surrounding matrix.	5- ca. 3 m northwest/west-northwest of Study Unit 1; visible on MGS; a deflated hearth, no oxidation or charcoal noted.
6	fire-cracked rock thermal feature	N 457.68 E 490.14	75 x 65 x 5	oval	no fill (feature was deflated)	29 cobbles and fire-cracked rock weighing 5 kg (4 cobbles were complete and 2 were cracked in situ); lithics and ceramics collected from the surrounding matrix.	6- ca. 2 m west-northwest of Study Unit 1; a deflated hearth, no oxidation or charcoal noted.
23	bell-shaped pit (contains human infant burial)	N 464.95 E 492.65	65 x 56 (expanding to 110 diameter) x 98	circular	Stratum 1: homogenous yellow brown silty loam (10YR6/4) with sparse charcoal and pumice; Stratum 2: homogenous light brown (10YR6/2) silty loam with denser charcoal and oxidized loam fragments; Stratum 3: homogenous yellow brown sandy loam (10YR6/4) with dispersed charcoal and pumice.	Stratum 1, 2 and 3 are probably midden deposits and contain sherds, lithics, bone; a layer of adobe chunks and FCR separates Stratum 1 and 2; a child burial rests directly on Stratum 3, with no obvious grave offerings.	23- ca. 6.5 m north-northwest of Study Unit 1; burial is unknown sex, 3 ± 1 years old, fair to poor condition, many bones missing or deteriorated, lying on Stratum 3 and covered by Stratum 2.
24	bell-shaped pit (contains human adult burial)	N 466.88 E 490.15	65 x 56 (expanding to 130 x 122) x 93	circular	Burial was placed on bottom of pit in NE quadrant and covered with construction debris and fire-cracked rock, then with a homogenous trash-free fill. Upper 20 cm of pit fill by washed in detritus from surrounding site surface	grinding slab (andesite) covering burial; Grave goods- Tallahogan Red seed jar, Lino Gray jar, 5 bone awls, 1 deer metatarsal, 3 pieces of hematite.	24- ca. 9 m north-northwest of Study Unit 1; Female, 45±4 years old.

Table 11.11. Continued.

Feature Number	Feature Type	Location (center point)	Dimensions L / W / D (in cm)	Outline Shape	Fill	Contents	Comments
25	bell-shaped pit	N 471.48 E	92 x 84	circular	fine grained sandy loam (10YR3/3)	probable midden deposit with lithics, Stratum 1 and 3 contain ceramics, lithics, bone and dispersed charcoal; Stratum 2 contains ground stone, burned cobbles, and lithic artifacts.	25- ca. 4.5 m northwest of Study Unit 1; Remains of 5 dogs recovered.
26	bell-shaped pit (contains articulated portions of dogs)	N 467.74 E 500.71	88 x 78 (expanding to 130 diameter) x 90	circular	Three episodes of infilling—Stratum 1 (0-70 cm) is homogenous brown silty loam (10YR5/3); Stratum 2 (70-80 cm) is a debris layer of adobe and cobbles; Stratum 3 (80 cm to base of pit) is homogenous midden fill like Stratum 1.		
27	keyhole-shaped structure	N 467.95 E 494.25	main chamber = 220 x 188 x 40-48 entrance = 70 x 55x 20-25	keyhole	Stratum 1 (0-5 cm); 10YR 4/4 post-occupation fill; Stratum 2 (5-18 cm): 10YR 3/3 compacted dark gray; Stratum 3 (18-46 cm): 10YR3/3 dark gray midden fill.	Stratum 1 and Stratum 2 contain few artifacts; Stratum 3 contains fire-cracked rock, burned cobbles, numerous ceramics, lithics and bones	27 – ca. 8 m north of Study Unit 1; contains 10 interior features including an informal hearth (not numbered), postholes (Features 39, 40, 42, 47), bell-shaped pits (Features 41, 52), and pot rests (Features 43, 46, 53).
33	keyhole-shaped structure	N 466.35 E 502.33	main chamber = 210 x 150 x 37-48 entrance = 90 x 50 x 19-24	irregular keyhole	Stratum 1 (0-10 cm); 10YR 4/1 dark gray midden; Stratum 2 (10-28 cm) 10YR 6/1 light gray midden and fire-cracked rock; Stratum 3 (28-48 cm) 10YR 5/4 yellow brown with few artifacts	4 obsidian projectile points, lithics, ceramics, bone, indeterminate groundstone fragment (fine-grained metaquartzite), 44 cobbles and 32 fire-cracked rock.	33- ca. 9 m north-northeast of Study Unit 1; shape is not as symmetrical as Feature 27. Contains a firepit (Feature 59), two interior pits (Features 57 and 58). Two possible postholes located outside and flanking the entrance (Feature 257).
39	posthole (in Feature 27)	N 467.95 E 494.25	30 x 13 x 25	oval	10YR5/3 brown silty loam with very little charcoal.	2 lithics, 2 fire-cracked rock weighing < 1 kg.	39- in north wall of Feature 27.
40	posthole (in Feature 27)	N 468.03 E 495.07	8 diameter x 16	circular	10YR6/3 pale brown silty loam	No artifacts recovered	40-in floor of Feature 27 at base of east wall.
41	bell-shaped pit	N 467.70 E 494.70	26 x 22 (expanding to 45) x 42	oval	10YR5/3 brown silty loam with charcoal	lithics, ceramics, charcoal.	41- in floor of Feature 27.
42	posthole	N 468.54 E 493.32	9 diameter x 25	circular	10YR6/3 pale brown silty loam	No artifacts recovered	42- at the base of the northwest wall of Feature 27.

Table 11.11. Continued.

Feature Number	Feature Type	Location (center point)	Dimensions L		Outline Shape	Fill	Contents	Comments
			/ W / D (in cm)	(in)				
43	pot rest	N 467.90 E 494.80	24 x 16 x 9		oval	10YR5/3 brown silty loam	No artifacts recovered	43- on floor of Feature 27; above the belled portion of Feature 41.
46	pot rest	N 468.27 E 495.00	22 x 18 x 8		oval	10YR5/3 brown silty loam	No artifacts recovered	46- on floor near east wall of Feature 27.
47	bell-shaped pit	N 468.90 E 494.85	26 x 24 (expanding to 54 x 36) x 50		circular	10YR5/3 brown silty loam with charcoal flecking and a few small adobe chunks	5 lithics, 1 bone fragment, 5 large pebbles, charcoal	47- at base of northeast wall of Feature 27.
52	bell-shaped pit	N 467.24 E 494.00	20 x 12 x 48 (maximum dimensions not recorded)		oval	10YR5/3 brown silty loam with charcoal flecking	1 very small obsidian projectile point (ca. 1 x 1 cm), 2 lithics, 2 ceramics, 1 small fire-cracked rock, charcoal.	52- in floor of Feature 27 at the base of the entrance step.
53	pot rest	N 467.62 E 494.30	18 x 14 x 9		oval	10YR5/3 brown silty loam with light charcoal flecking	No artifacts recovered	53- on floor of Feature 27
57	bell-shaped pit	N 466.73 E 503.17	30 x 23 x 17		oval	dark brown mixed with light gray ashy sediments	2 lithics, 1 ceramic, 1 polishing stone.	57- in northeast corner of Feature 33.
58	pit	N 465.77 E 503.26	20 wide x 18 tall x 30 deep		oval	dark brown fill	no artifacts	58- in southeast corner of Feature 33; angles downward to the southeast, base is ca. 10 cm deeper than structure floor.
59	firepit	N 465.90 E 502.80	50 x 45 x 14		oval	10YR5/2 grayish brown ashy silty loam with charcoal and a few small pieces of burned adobe	no artifacts	59- in south wall/floor of Feature 33.
60	bell-shaped pit (contains dog burial)	N 470.90 E 488.05	95 x 80 (expanding to 135 x 127) x 125		circular	Stratum 1: 7YR 6/3 Stratum 2: rocky soil, 7YR 6/3 Stratum 3: midden fill, 10YR 4/4 Stratum 4: compact soil, 7.5YR 7/2 Stratum 5: compact soil, no rocks, 7.5YR 6/4 Stratum 6: midden, 7.5YR 6/4 Stratum 7: midden, 10YR 4/4 Stratum 8: midden, 10YR5/4 Stratum 9: adobe chunks, 10YR8/4	Strata 1, 3, 7, 8, and 9 contain abundant ceramics, lithics, bone; Strata 2, 4, 5, and 6 have sparse artifacts, higher amounts of adobe chunks and cobbles	60- ca. 4.5 m west of Feature 25; a dog burial (Feature 155) was interred in a pit excavated from the top of Stratum 8 into Stratum 9, covered by Stratum 7 fill.

Table 11.11. Continued.

Feature Number	Feature Type	Location (center point)	Dimensions L / W / D (in cm)	Outline Shape	Fill	Contents	Comments
65	straight-walled ventilator shaft and tunnel for pistructure SU 1; reused as a bell-shaped pit	N 455.54 E N 453.85 E 501.00	74 x 67 x 38- shaft- 120 x 95 (expanding to 160 x 150) x 125-142; tunnel- 36 dia. x 230 long	round oval	10YR5/4 yellowish brown silty loam Stratum 1 (37-44 cm): 10YR4/2 dark grayish brown carbon stained sandy loam w/ charcoal; Stratum 2 (9-24 cm): 10YR5/3 brown silty loam w/ charcoal & some mottling; Stratum 3 (32-49 cm): 10YR6/3 pale brown silty loam w/ pumice, charcoal & lots of adobe chunks (many w/ post or hand imprints); Stratum 4 (34-41 cm): 10YR6/4 light yellowish brown silty loam w/ little charcoal & adobe chunks near the base	lithics, ceramics, bone. original vertical vent shape reused as a bell- shaped pit containing lithics, ceramics, bone, charcoal, 36 kg of burned cobbles and fire-cracked rock.	65- ca. 3 m west of Study Unit 125- ca. 2 m east/east- southeast of Study Unit 1; ventilator shaft and tunnel to Study Unit 1. Vertical shaft subsequently used as bell- shaped pit.
126	thermal pit	N 470.80 E 494.36	78 x 70 x 32	circular	sandy loam with flecks of charcoal; abundant fire-cracked rock	40 kg of burned cobbles and fire-cracked rock, metate fragments from a single artifact lining the base.	126- 1.6 m north of Feature 27.
127	bell-shaped pit	N 471.60 E 493.64	108 x 82 (expanding to 120 x 102) x 80	roughly circular	0-15 cm: 10YR 6/3 post occupational fill; 15-56 cm: 10YR 6/6 midden fill deposits; 56-64 cm: 10YR 7/4 layer of adobe chunks and charcoal; 64-80 cm: 10YR 7/4 midden	Corn cob fragments, yucca brush, projectile points, ceramics, lithics	127- ca. 2 m north Feature 27.
155	dog burial	N 470.65 E 488.10	57 x 50 x 30	oval	rocky fill, capped with modified basalt slab	No associated artifacts	155-in Feature 60 fill, near base of pit.
170	thermal pit	N 459.30 E 488.33	59 x 50 x 17	oval	10YR3/2 very dark grayish brown sandy loam w/ charcoal	lithics, ceramics, 39 cobbles and fire- cracked rock weighing 22 kg. Two layers of fire-cracked rock-many cracked in situ.	170- ca. 4 m northwest of Study Unit 1
171	straight-walled pit	N 451.76 E 488.90	64 x 40 x 64	oval	10YR6/3 pale brown silty loam w/ pumice & adobe chunks. W 1/2 had more adobe.	lithics, ceramics, obsidian projectile point, charcoal, fire-cracked rock and 6 cobbles weighing 17.5 kg.	171- 3 m west-southwest of Study Unit 1.
172	straight-walled pit	N 457.25 E 489.56	40 x 34 x 20	circular	Stratum 1: 10YR 7/3 sandy loam; Stratum 2: 10YR 6/4 sandy loam	sparse lithic artifacts and dispersed charcoal flecks in both strata.	172- ca. 3 m west-northwest of Study Unit 1.

Table 11.11. Continued.

Feature Number	Feature Type	Location (center point)	Dimensions L / W / D (in cm)	Outline Shape	Fill	Contents	Comments
180	basin-shaped pit	N 454.95 E 502.45	235 x 190 x 27	Irregular oval	homogenous sandy loam	Sparse lithics, ceramics, bone, charcoal.	180- 3 m east of Study Unit 1.
202	straight-walled pit	N 451.68 E 489.50	150 x 30 x 79	irregular oval	10YR6/3 pale brown silty loam with pumice & adobe chunks, some small gravels noted. Upper 22 cm was mostly adobes	Lithics, ceramics, bone, ochre.	202- 2.5 m west-southwest of Study Unit 1.
244	burial pit, straight-walled	N 459.55 E 500.10	125 x 80x 61	oval	10YR5/4 yellow brown sandy loam	Female, 30±5 years old. Burial offerings: MRG Plain Gray beaker, MRG Plain Gray pitcher; a few lithics and ceramics in the fill.	244- 3 m northeast of Study Unit 1
256	basin-shaped pit	N 457.40 E 506.50	111 x 96 x 18	oval	Midden deposit; gray silty sand	Abundant ash, charcoal, lithic microflakes, projectile point, piece of shell	256- 7.5 m east/east-northeast of Study Unit 1.
257	two possible postholes	A. N 465.80 E 500.30 B. N 465.62 E 500.65	A. 15 dia. x 10 B. 12 dia x 10	round (both)	10YR5/3 brown sandy clay loam (both)	A. No artifacts recovered; B. bone	257- possible postholes at the entrance to Feature 33.
258	straight-walled pit	N 471.43 E 498.20	78 x 60 x 38	round	One stratum of 10YR5/4 yellowish brown sandy loam	No adobe chunks, fire-cracked rock or charcoal, very few artifacts.	258-3.6 m northeast of Feature 27.
260	possible posthole	N 462.18 E 500.26	26 x 24 (reducing to 6) x 22	irregular round	no charcoal noted	1 ceramic.	260- 4 m south of Feature 33; bioturbation on north and east sides, diameter reduces to 6 cm at 12 cm deep.
265	possible posthole	N 463.94 E 490.78	26 x 24 (reducing to 11) x 27	irregular round	charcoal chunks noted	1 lithic, 2 ceramics.	265- 2.5 m southwest of Feature 23; some bioturbation, diameter reduces to 11 cm at 20 cm deep.
266	possible posthole	N 465.54 E 491.10	27 x 24 x 28	irregular oval	charcoal in fill	No artifacts, but lots of charcoal present.	266- 1.6 m north of possible posthole Feature 265

The possible shallow ramp entrance is represented by a narrow protrusion 53 cm wide extending 70 cm south from the center of the main chamber of the structure. The floor of this possible entrance is about 25 cm above the floor of the main chamber (Fig. 11.13).

The walls of the structure are vertical, and the walls and floor are unprepared. There was no physical evidence of a roof in the form of burned beams, matting, or beam-impressed adobe, but the structure had four postholes around the perimeter of the main chamber, which may have functioned as roof supports. These postholes (Features 39, 40, 42, and a posthole in the bottom of Feature 47) were 8 to 9 cm in diameter by 16 to 25 cm deep (Fig. 11.12). The westernmost posthole (Feature 42) was set into the wall, while the easternmost posthole (Feature 40) was located adjacent to the wall inside the structure. Feature 39 was a slightly larger posthole inset into the wall on the north side of the main chamber measuring 13 cm in diameter by 25 cm deep. Another post was seated in Feature 47, a bell-shaped pit located adjacent to the wall in the northeast quadrant of the main chamber. The pit measured 26-by-25 cm at floor level and flared out to 54 cm by 36 cm at a depth of 22 cm. The posthole in the bottom of the pit had a diameter of 16 cm, and extended downward another 16 cm from the base of the pit. Fill of the Feature 47 pit was a homogeneous brown silty loam with charcoal flecks, small pieces of adobe, and a few artifacts.

#### *Floor Features*

**Hearth.** A portion of the structure floor near the center of the main chamber was oxidized. This oxidized patch of floor was roughly crescentic in shape, 36 cm long by 17 cm wide, and appears to be an informal hearth area. No feature number was assigned to this probable hearth.

**Bell-Shaped Pits.** Feature 41 is a bell-shaped pit in the southeast quadrant of the main chamber measuring 26-by-22 cm at floor level, flaring outward to the east and north to a diameter of 45 cm at a basal depth of 42 cm. Fill consisted of a homogeneous sandy loam with an abundance of charcoal and a few artifacts.

Feature 52 is a bell-shaped pit originating in the main chamber floor at the base of the entrance step, measuring 20 by 12 cm at floor level and flaring outward to the east, west, and south beneath the step reaching a total depth of 48 cm. Fill consisted of ground stone fragments, a projectile point, lithics, and ceramics.

**Pot Rests (?).** Features 43, 46, and 53 are shallow basin-shaped indentations in the floor, interpreted as pot rests. All have depths of 8 to 9 cm, are oval in outline, and measure between 18 and 24 cm long by 14 to 18 cm wide.

#### *Structure 33*

Structure 33 is a small pit structure roughly "keyhole" shaped in outline, located directly southeast of the bell-shaped pit Feature 26 (Fig. 11.11). This shallow structure contained a hearth and two storage pits with a short ramp entry from the east.

#### *Excavation Procedures and Stratigraphy*

Structure 33 was identified as an elongate oval stain during the mechanical scraping process and was bisected along an east-west axis. The northern half of the fill was excavated as a single unit to floor level, at a depth of 48 cm below the ground surface. Profiles of the fill were drawn and samples for flotation and pollen analysis were taken. The remaining fill was then removed by natural stratigraphic units. Fill of Structure 33 reflected at least three episodes of cultural infilling. The uppermost 10 cm of fill (Stratum 1) consisted of dark gray soil containing ceramics, lithics, bone and charcoal indicative of midden deposits. From 10 to 28 cm deep the fill was a lighter gray and contained both artifacts and pieces of fire-cracked rock (Stratum 2), while the lowermost Stratum 3 (28 to 48 cm) consisted of a yellow-brown fill that did not contain substantial numbers of artifacts.

#### *Structure Description*

Structure 33 consists of a larger subrectangular chamber measuring 210-by-150 cm in length



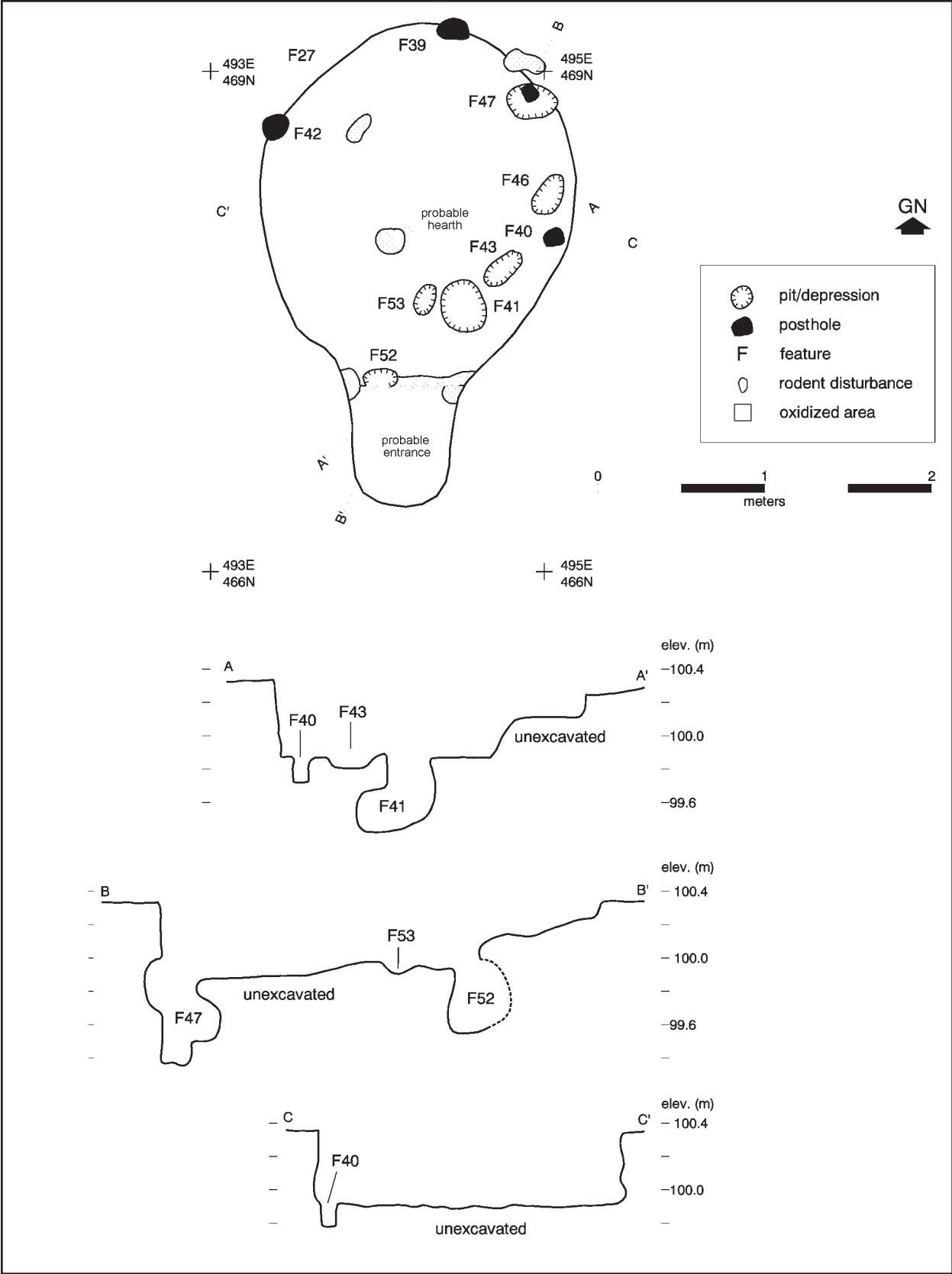


Figure 11.12. Study Unit 2, Structure 27.

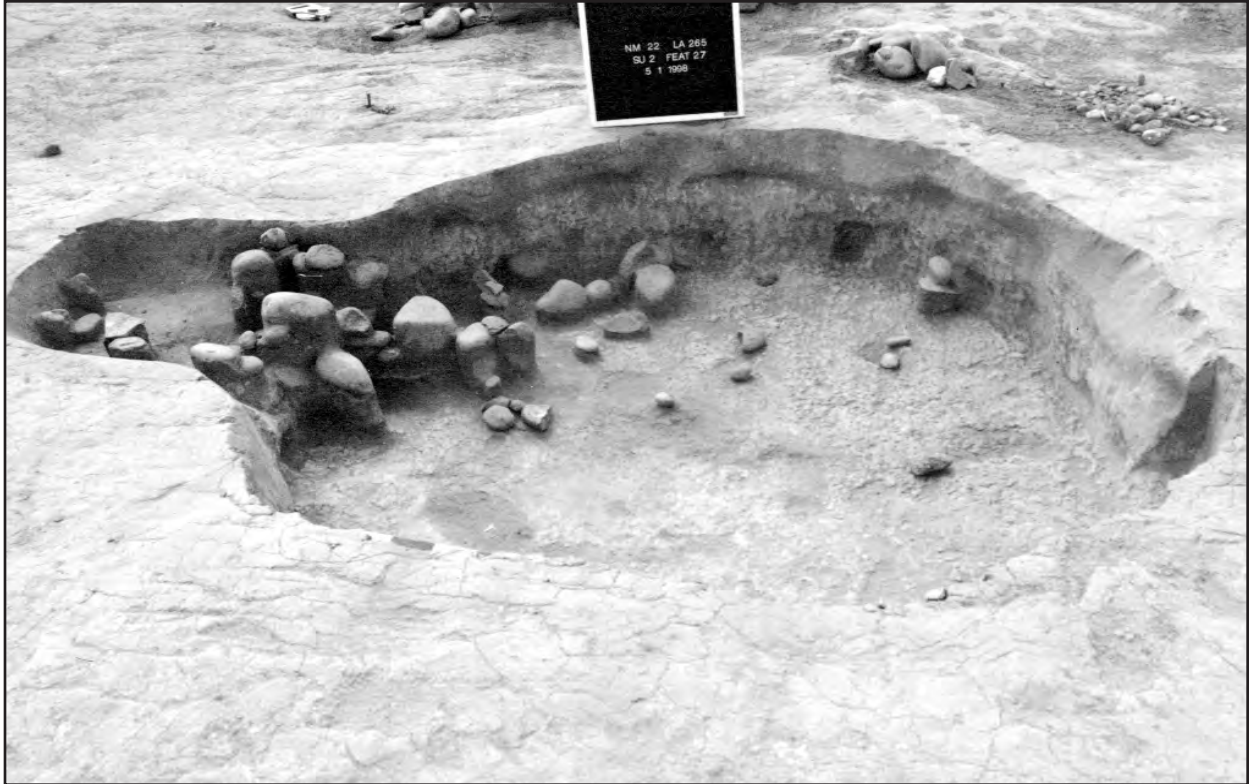


Figure 11.13. Study Unit 2, Structure 27, burned rock in fill.



Figure 11.14. Study Unit 2, Structure 27, after excavation, looking north.

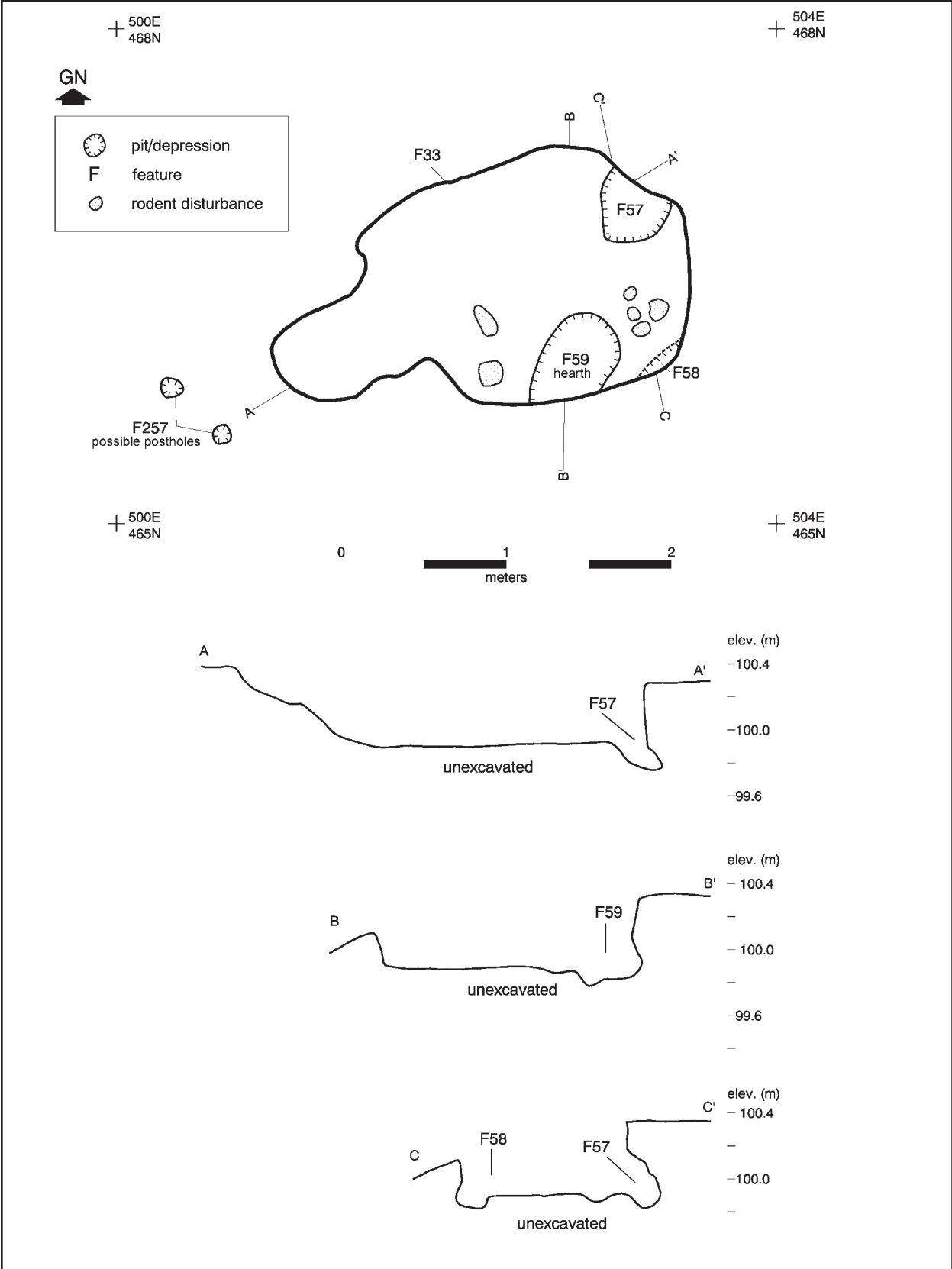


Figure 11.15. Study Unit 2, Structure 33, plan and profile.

and width, reaching a maximum depth of 48 cm at its eastern end. The floor slopes upward slightly to the west, where the structure walls narrow to form a shallower ramp-like protrusion measuring 90 cm long by 50 cm wide, varying from 24 to 19 cm deep (Fig. 11.15). The walls and floor are unprepared, and unlike Feature 27, Structure 33 has no evidence of postholes. It does contain an informal hearth (Feature 59) located in a shallow pit, which is slightly inset into the south wall of the main chamber.

Walls were vertical and the walls and floor were unprepared. A possible ramp entrance extends west from the center of the main chamber, measuring 90 cm long by 50 cm wide. The floor of this entrance is 24 cm above the floor of the main chamber, and slopes slightly upward to the west from the main chamber. No definitive evidence of roof construction was noted either as postholes or in the form of remnant roof construction elements such as beams or beam impressions.

#### *Floor Features (Figure 11.15)*

**Hearth.** Feature 59 is a fire pit constructed partially into the south wall of Structure 33. This hearth is a shallow unlined pit measuring 50-by-45 cm at the floor level, and is 14 cm deep. The pit undercuts the south wall of the structure by 10 cm. The bottom and undercut portion of the pit exhibits oxidation as does the adjacent wall surface to both sides and above the pit. Fill of Feature 59 had a high charcoal and ash content and included fragments of burned adobe but no artifacts.

**Small Pits.** Feature 57 is a pit measuring 30-by-23 cm in length and width by 17 cm deep that opens on the floor of the structure in the northeast corner and undercuts the wall slightly. Fill of the pit was a dark brown matrix with ash containing two lithic artifacts, a ceramic fragment, and a polishing stone. No oxidation was noted in the pit walls or floor.

Feature 58 is a pit excavated slightly into the southeast corner of Structure 33, measuring 20-by-18-by-14 cm deep and filled with dark

brown soil. No oxidation was noted in the pit and no artifacts were present in the fill.

**Possible Entrance Postholes.** Two small circular pits documented as Feature 257 are located less than a meter to the west and on either side of the possible entrance to Structure 33, and could represent postholes for an entrance superstructure (Fig. 11.12). These pits were both straight sided, 10 cm deep, and measured 15 cm and 12 cm in diameter. Neither contained any wood or charcoal.

#### *Thermal Features*

Six thermal features were found in Study Unit 2. Features 1, 2, 126, and 170 were large, shallow, basin-shaped pits filled with burned river cobbles, while Features 5 and 6 were fire-cracked rock concentrations. Several of the thermal features (Features 1, 2, 5, 6, and 170) were clustered in a 5-by-3-m area directly northwest of the Study Unit 1 pithouse. The sixth (Feature 126) was located adjacent to a bell-shaped pit north of the keyhole-shaped Structure 27.

Feature 1 measured 54-by-49-by-14 cm and exhibited evidence of oxidation on its bottom (Fig. 11.16). The feature contains 22 kg of burned cobbles and fire-cracked rock. Feature 2 was 70-by-36-by-10 cm in outline and depth, and although filled with burned rock had no obvious evidence of oxidation on its sides or base (Fig. 11.12). Feature 126 was nearly circular, measuring 78-by-70 cm in outline by 32 cm deep. The bottom of the feature was partially lined with five fragments of a metate, cracked in situ. Fill consisted of 40 kg of burned and fire-cracked cobbles. Feature 170 measured 59-by-50-by-17 cm and was similarly filled with burned rock, again with no clear evidence of oxidation of the feature itself. All three features contained significant numbers of burned and unbroken cobbles, burned cobbles which were heat fractured, but still in situ, and lesser quantities of fire-cracked rock pieces. Features 5 and 6 were fire-cracked rock concentrations measuring 75-90 cm by 65 cm in areal extent, and consisted of only single slightly more dis-



Figure 11.16. Study Unit 2, Feature 1.

persed layers of burned unbroken and broken cobbles 5–10 cm deep. These features did not have the formal integrity exhibited by Features 1, 2, and 170. Features 5 and 6 may have been discard piles associated with the use of one or more of the other features, or perhaps more likely, represent deflated features that were once like Features 1, 2, and 170, but are not as well preserved.

#### *Bell-Shaped Pits*

Feature 23 is a bell-shaped pit measuring 65-by-56 cm at its opening, flaring to a 110-cm diameter at its basal depth of 98 cm. The pit is located 2 m south of Feature 27, a keyhole-shaped structure. There was no evidence of oxidation on the base or walls of the pit. The lowermost fill stratum of the pit (Stratum 3) was a 25-cm-thick homogeneous layer of yellow-brown sandy loam with dispersed small pumice and charcoal fragments. An infant burial was found lying on its left side with the skull to the east in the northeast quadrant of

the pit, apparently interred by placing the individual on the accumulated Stratum 3 deposits. This burial was disturbed by a large rodent burrow through the lower thoracic region. The child was 3 years old ( $\pm 1$  year). No grave goods were associated. A thick layer of silty loam fill with more abundant charcoal and small fragments of oxidized loam (Stratum 2) covered the burial and filled the pit to a height of 28 cm above Stratum 3, or about 53 cm above the floor. Atop Stratum 2 was a layer of large adobe chunks and few pieces of fire-cracked rock; above that was Stratum 1, consisting of silty loam like Stratum 2, but with less charcoal admixture. The pit thus seems to have undergone a sequence of distinct filling events after its probable primary use as a storage facility; first, the accumulation of Stratum 3; second, the interment of the burial and its covering with Stratum 2; third, the accumulation of a layer of adobe chunks and fire-cracked rock; and finally, the infilling with Stratum 1.

Feature 24 is a bell-shaped pit 65-by-56-cm wide at ground level, expanding to a 130-by-

122-cm diameter at a basal depth of 93 cm. The pit is located 3.3 m west-southwest of Feature 27. The pit walls and floor are oxidized. An adult female (45 ± 5 years old) was found at the base of the pit, covered with chunks of residual silt, burned adobe (some with beam impressions), and fire-cracked rock. The individual was interred on her right side with the knees flexed and the skull oriented to the northeast. Associated grave offerings included two ceramic vessels, five bone awls, a piece of hematite, a deer metatarsal, a grinding slab, and a mano. Small pockets of sediment lenses indicated that the pit had undergone infilling with waterborne sediments after the burial had been covered with the rock and adobe debris. The pit was then filled with a homogeneous layer of sandy loam relatively free of artifacts to within 20 cm of the top (Stratum 2). The upper Stratum 1 is a dark gray deposit of sand, silt, and artifacts with an admixture of charcoal that appears to represent noncultural infilling of the depression from the surrounding site surface. Given the large size of the pit relative to the space used for the inhumation, and the fact that the pit walls and floor were oxidized, it seems probable that Feature 23 was used first as a storage facility, and secondarily as a grave.

Feature 25 is a shallow bell-shaped pit located about 4.5 m northwest of the small "keyhole-shaped" Feature 27. The ground level opening of Feature 25 is roughly circular (92-by-84 cm), expanding to maximum dimensions of 130-by-122 cm at a depth of only 22 cm. There was no evidence of oxidation on the floor or side walls of the pit. It was filled with a homogeneous matrix of dark brown sandy loam containing ceramics, lithics, bone, and a few cobbles. Fill of the pit seems to represent a fairly short time frame of deposition, and no layering or bedding was observed.

Feature 26 is a bell-shaped pit located directly north of the small keyhole-shaped structure Feature 33. The opening of the pit measures 88-by-78 cm at ground level, and it flares to a diameter of 130 cm at a depth of 90 cm. No oxidation of the pit walls or floor was noted. Fill of Feature 26 indicates at least three

deposition episodes. Stratum 3 is a 10-cm-thick layer of brown sandy loam containing cultural material including lithics, ceramics, and dispersed charcoal lying directly on the floor. This was covered by Stratum 2, a 5–10-cm-thick lens of burned cobbles, fire-cracked rock, and chunks of structural adobe, and artifacts. Intermixed in this debris layer were the partially articulated portions of several dogs, including articulated forelegs, feet, and sections of vertebral columns. One canid skull had a green break impact fracture. Also found in this debris layer was an obsidian projectile point, an artiodactyl bone, and ground stone fragments. Stratum 1 was the upper 70 cm of fill above the debris layer to the top of the pit, and in composition was much like Stratum 1, consisting of a more homogeneous midden deposit containing sherds, lithics, and small faunal remains. Laminated waterborne sediments were found between 40 and 50 cm above the floor within the upper Stratum 3, perhaps indicating a period when the pit was not actively being used for trash disposal. Otherwise no layering or bedding of the deposits was noted.

Feature 60 is a bell-shaped pit located 1.5 m west of Feature 25 containing Feature 155, an intrusive dog burial. The ground level opening of the pit is circular, 95-by-80 cm in diameter, and the pit expands in diameter to 135-by-127 cm at a depth of 125 cm. There was no evidence of oxidation of the floor or side walls of the pit. Feature 60 contained nine distinct strata of fill, and an intrusive dog burial, reflecting a complex sequence of trash disposal following its probable initial use as a storage facility. The lowermost Stratum 9 is an 18-cm-thick layer of adobe chunks, broken pieces of ground stone, and fire-cracked rock intermixed with ceramics, lithics, and faunal remains. Overlying this is Stratum 8, a 25-cm-thick midden deposit containing lesser amounts of adobe, but no ground stone or fire-cracked rock. The Stratum 8 deposit was higher against the northern portion of the pit, perhaps indicating trash had been thrown into the pit from the south. A pit for a dog burial (Feature 155) had been excavated into the accumulated

Strata 8 and 9 in the south-central section of Feature 60. This burial pit was roughly circular in outline, measuring 57-by-50 cm and about 30 cm deep. The pit was excavated through Stratum 8 partially into Stratum 9, and a small dog was buried on its right side with the skull oriented east. The burial was covered with a large basalt slab with ground edges, possibly once used as a deflector. This slab sealed the burial pit at the top level of the Stratum 8 fill, which lipped upward toward the north side of Feature 60 pit wall.

Stratum 7 was a wedge-shaped lens of dark brown midden that extended over the northern half of the pit, and is much higher against the northern pit wall than the center, suggesting the fill had been tossed in from the south. Stratum 6 was a continuous layer of dark midden fill containing fewer artifacts, which extended across the entire pit for an average depth of 28 cm, but again lapped higher against the north wall of the pit. Subsequent infilling layers reflect this sloping tendency, possibly indicating dumping from the south. Stratum 5 had a high calcium carbonate content and contained no rock and few artifacts. Stratum 4 was also composed of compacted soil, contained very small fragments of adobe, and no artifacts at all. Stratum 3 was 10–14 cm thick, contained more abundant artifacts, and extended across the entire pit. Stratum 2 is an indurate rocky layer 5–8 cm thick capping the underlying midden strata. Stratum 1 is the uppermost 18–20 cm of fill composed of midden with a high ash admixture and a high density of artifacts, clasts, cobbles, fire-cracked rock, and bone.

Feature 127 is a bell-shaped pit located directly northwest of thermal Feature 126, slightly less than 2 m north of the keyhole-shaped structure, Feature 27. Feature 127 had a roughly circular opening measuring 108-by-82 cm and flared out to the south to a maximum diameter of 120 cm at a basal depth of 80 cm. No evidence of oxidation was noted on the wall or floor of the pit. Fill of the pit reflected some sequencing of infilling events. The lowest strata was a 16-cm-thick layer of midden fill

overlaid by a 8-cm-thick lens of adobe chunks intermixed with large pieces of charcoal. The remainder of the pit was filled to within 15 cm of the surface with midden fill, reflecting some localized lensing indicating distinct depositional events. Corn cob fragments, three projectile points, a possible yucca brush, and a large amount of bone was recovered from the fill in addition to ceramics and lithic artifacts. The uppermost stratum may reflect materials washed into the deposit from the surrounding site surface after abandonment of the surrounding of the site area.

### *Straight-Walled Pits*

Feature 65 is a large cylindrical pit located 3 m west of Study Unit 1 and south of the complex of thermal features represented by Features 1, 2, 5, and 170. It measured 72-by-70 cm at ground surface and was 42 cm deep. Walls were vertical, but a large rodent burrow had destroyed much of the east wall. The floor was flat and gently sloping downward to the northwest. No evidence of oxidation was observed on the floor or the walls. Fill consisted of a single homogeneous stratum of yellowish brown silty loam with a light dusting of pumice, containing lithics, ceramics, and bone. No evidence of layering or bedding was noted.

Feature 171 is a straight-walled pit with an irregular circular outline shape apparently excavated partially into the southeastern extent of Feature 202. The feature measured 64-by-40 cm in maximum dimensions at the ground surface and was 64 cm deep. No oxidation of the straight side walls or floor was noted. The southern end of the feature flared outward slightly underneath the south wall, and a pile of cobbles weighing 17.5 kg was resting on the floor directly north of this sub-pit. Fill consisted of a light brown sandy loam containing a few artifacts, including a projectile point.

Feature 172 is a roughly circular straight-walled pit measuring 40-by-30 cm at its opening and 20 cm deep. The pit was excavated partially into the edge of thermal Feature 6. No

oxidation was noted on the pit walls or floor. Fill consisted of two strata; the western portion of the pit was filled with a homogeneous light brown sandy loam (Stratum 1) with dispersed charcoal flecks, a few pieces of debitage and a small cobble. This stratum appears to have filled the pit from its center to the top near the western side of the pit. Above this, and filling the rest of the pit to its eastern edge, was a similar stratum of light yellowish brown fill (Stratum 2), also containing a few lithic artifacts, dispersed charcoal, and a few small cobbles.

Feature 179 is an oval straight-walled pit located 1.6 m east of the Study Unit 1 pithouse, measuring 86-by-75 cm at ground level by 56 cm deep on its south side to 72 cm deep on its north side. No evidence of oxidation on the bottom or sides of the pit was noted. Fill is a homogeneous brown sandy loam containing few artifacts or faunal material. No marked evidence of bedding or layering of fill was noted.

Feature 202 is located 2.5 m southwest of Study Unit 1, adjacent to pit Feature 171. The feature is an oblong straight-walled pit measuring 150-by-30 cm at ground level and 79 cm deep. No evidence of oxidation was noted in the walls or floor, and fill consisted of a pale brown silty loam midden deposit containing numerous microflakes, some ground stone fragments, rodent bone, dispersed charcoal and gravel.

Feature 258 is a cylindrical straight-walled pit located 3.6 m northeast of Feature 27. The pit is roughly circular in outline, measuring 78-by-60 cm in diameter, and 38 cm deep. No oxidation of the walls or floor was noted, and the pit was filled with a homogeneous yellow-brown matrix containing few artifacts and no adobe chunks, fire-cracked rock, or charcoal. One clast was found in the center of the pit about 6 cm above the floor, but otherwise no bedding or layering of fill indicating separate episodes of infilling was noted.

#### *Basin-Shaped Pits*

Feature 180 is a shallow basin-shaped pit 20–56 cm deep with an amorphous outline shape,

measuring 235-by-190 cm in length and width, located east and about 3 m from Study Unit 1, directly northeast of the Feature 125 ventilator shaft for pithouse Study Unit 1. Feature 180 has an uneven bottom, sloping side walls, and was filled with a single stratum of sandy loam containing a sparse amount of ceramics, lithics, bone, and shell. No evidence of oxidation was noted on the floor or walls of the feature, and its function is problematical. Its size and depth however, is reminiscent of Feature 56 in Study Unit 14, although no well-defined floor features were found in Feature 180. A number of rodent-disturbed areas on the floor possibly indicate the one-time presence of postholes or subfloor pits, but excavation did not unambiguously resolve this possibility.

Feature 256 is located 8 m east and slightly north of Study Unit 1, and is a shallow (18 cm deep), oval, basin-shaped pit measuring 111-by-96 cm in length and width. The upper fill of the feature may have been removed by prior highway construction (Feature 256 is exposed in the existing road cut). No evidence of oxidation of the sides or bottom was identified, and fill consisted of gray silty sand with abundant clay pellets, ash, and pieces of charcoal. Artifacts included ceramics, lithics, debitage microflakes, a piece of shell, and a projectile point.

#### *Burial Pits*

Feature 244 is a burial pit located 3.6 m northeast of the Study Unit 1 pithouse. The pit itself is oval in outline shape, measuring 125-by-86 cm in major and minor dimensions, had vertical walls, and was 61 cm deep. No oxidation was noted on the floor or the walls of the pit, and the pit seems to have been excavated solely to contain the burial.

The interment was a female, 30+ years old, lying on her back with legs flexed and to the left side, with the skull oriented west and the face to the southeast. The left arm was flexed with the hand near the face, while the right arm was extended with the hand in the pelvic area. Associated offerings included two ceramic vessels. A small Middle Rio Grande Plain



pitcher with a strap handle was located to the right of the pelvis, and a Middle Rio Grande Plain beaker with a lug handle was located to the left of the pelvis. The individual was buried at the bottom of the pit, and fill covering the burial up to the top of the pit was coarse-grained yellowish brown sandy fill containing a few ceramics and lithics, but no adobe chunks, fire-cracked rock, or cobbles.

#### *Postholes*

Feature 260 is a possible posthole located midway between the structure, Feature 33, and the burial pit, Feature 244. Feature 260 is nearly circular, measuring 26-by-24 cm in diameter and 22 cm deep. The pit constricts to a diameter of 6 cm at a depth of 10 cm. No charcoal or wood was found in the fill and no other possible postholes were found in the vicinity. The pit had been rodent-disturbed.

Feature 265 is another possible posthole located 2 m southwest of bell-shaped pit Feature 23. Feature 265 is 26-by-24 cm in diameter and 27 cm deep, with vertical walls. The bottom few centimeters of the pit constricts to an 11 cm diameter, perhaps indicating a post of that diameter. No charcoal or wood was found in the pit, although two ceramic fragments were found in the fill.

Feature 266 is a possible posthole located 1.6 m north of Feature 265, midway between Features 23 and 24, two bell-shaped pits. Feature 266 is nearly circular, measuring 27-by-24 cm in diameter and is 28 cm deep. Fill near the bottom of this vertical walled pit contained abundant charcoal chunks, which may reflect remnants of a burned post. A possible rock chinking stone was recovered from the fill of the pit near its top.

#### *Artifacts*

The full range of domestic artifact classes was recovered from Study Unit 2 structures, pit features, and activity areas. A total of 778 potsherds, 1,648 lithic artifacts, and 727 faunal specimens were analyzed and are summarized below.

**Ceramics.** All Study Unit 2 components yielded a similar distribution of pottery types (Table 11.12). Eighty-five to 89 percent of all sherds were Middle Rio Grande Plain body sherds with the few rim sherds representing seed jar, pitchers, bowls, and ollas (Table 11.12). These forms are typical of a domestic assemblage. Most of the sherds were recovered from structure or feature fill indicating that they were deposited by residential occupants of other structures. These forms, no doubt, represent the daily refuse from the larger pithouse occupations. A small proportion of sherds from all contexts exhibit interior wear indicative of cooking.

**Chipped and Ground Stone Artifacts.** A total of 1,648 chipped and ground stone artifacts were analyzed from structure and feature contexts. Lithic type by material group summaries are provided in Tables 11.13 to 11.18. Written summaries by components are presented below.

*Feature 24 Human Burial Pit.* Fifty-five lithic artifacts were recovered from a human burial pit (Feature 244) in Study Unit 2 (Table 11.13). The majority was manufactured from chalcedony (42 percent), and nonvesicular igneous materials (29 percent). Chert ( $n = 9$ ) and Jemez obsidian ( $n = 7$ ) material categories were also represented. The combined assemblage indicates an emphasis on later stages of secondary core reduction with 84 percent of the whole flakes lacking dorsal cortex. Fifteen percent exhibited partial dorsal cortex. No evidence of tertiary formal tool manufacture was recovered. Single-faceted (66 percent) and collapsed platforms (21 percent) were most common among flakes with platforms. A single multiplatform core was also recovered.

Unutilized flakes (85 percent) and unutilized small angular debris (9 percent) composed the majority of the assemblage. A complete chalcedony flake exhibited three unidirectionally retouched edges lacking evidence of utilization. Two edges display utilized edge angles of 56 degrees and a third an edge angle of 66 degrees. All are consistent with tools manufactured for scraping activities.

*Structure 1 Ventilator Shaft.* One hundred

Table 11.12. LA 265, SU 2, Features, Ceramic Distribution

	523: SU 2- Keyhole Structures & Internal Features	524: SU 2- Large Bell- shaped Pits	525: SU 2- Surface Hearths and FCR Scatters	526: SU 2- Buried Hearths	527: SU 2- All Other Features	521: SU 2- Human Burial, In Pit
Indeterminate utility ware	-	-	-	-	1	-
	-	-	-	-	0.6%	-
MRG Mudware	3	2	-	-	3	3
	1.1%	0.7%	-	-	1.7%	9.1%
MRG Plain rim	6	5	1	-	7	27
	2.3%	1.8%	2.4%	-	3.9%	81.8%
MRG Plain body	233	239	35	16	158	-
	88.9%	85.7%	85.4%	88.9%	88.8%	-
MRG Wide Neckbanded	-	1	-	-	-	2
	-	0.4%	-	-	-	6.1%
MRG Unfired Plain Grayware	-	7	-	-	-	-
	-	2.5%	-	-	-	-
MRG Unpainted undifferentiated	6	5	3	1	2	-
	2.3%	1.8%	7.3%	5.6%	1.1%	-
MRG Mineral Paint (undiff)	3	2	2	1	-	-
	1.1%	0.7%	4.9%	5.6%	-	-
San Marcial B/w	1	3	-	-	1	1
	0.4%	1.1%	-	-	0.6%	3.0%
Slipped Red over white paste (Tallahogan-like)	2	3	-	-	4	33
	0.8%	1.1%	-	-	-	100.0%
Kana'a B/w	1	-	-	-	-	-
	0.4%	-	-	-	-	-
Jornada Brown body	3	3	-	-	-	-
	1.1%	1.1%	-	-	-	-
Mogollon Red-on-brown	-	-	-	-	1	-
	-	-	-	-	0.6%	-
San Francisco Red	3	3	-	-	-	-
	1.1%	1.1%	-	-	-	-
Alma Plain body	1	3	-	-	1	-
	0.4%	1.1%	-	-	0.6%	-
Reserve Smudged	-	3	-	-	-	-
	-	1.1%	-	-	-	-
Total	262	279	41	18	178	66
	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%

MRG = Middle Rio Grande

and seventy-five lithic artifacts were recovered from the vent shaft in Structure 1 (Table 11.14). The majority of the assemblage was manufactured from chalcedony (31 percent), Jemez obsidian (23 percent), nonvesicular igneous materials (23 percent), and chert (20 percent). Three quartzite artifacts were also recovered. The assemblage indicates an emphasis on later stages of secondary core reduction with 81 percent of the whole flakes lacking dorsal cortex. The large population of flakes with single-facet platforms (71 percent) is also characteristic of secondary core reduction. There is only limited evidence of primary decortication; 5 percent of

whole flakes exhibit 100 percent dorsal cortex. Bifacial tool manufacture and resharpening are indicated within the obsidian material category by bifacial thinning flakes ( $n = 5$ ) and resharpening flakes ( $n = 3$ ). Retouched or prepared platforms (21 percent) and collapsed platforms (52 percent) were the most common platforms identified among obsidian flakes with platforms. Collapsed or shattered platforms are common in highly siliceous material categories like obsidian.

Unutilized flakes (87 percent) and unutilized small angular debris (7 percent) composed the majority of the assemblage. Only a

Table 11.13. LA 265, SU 2, Lithic Assemblage in Human Burial

Lithic Type	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	60	2	40	-	-	-	-	5	9.1
Flake	19	40.4	5	10.6	7	14.9	16	34	47	85
Tested Rock	-	-	1	100	-	-	-	-	1	1
Core, Multiplatform	-	-	1	100	-	-	-	-	1	1
Flake, Marginal Retouch	1	100	-	-	-	-	-	-	1	1
Total	23	41.8	9	16.4	7	12.7	16	29.1	55	100

Table 11.14. LA 265, SU 2, Lithic Assemblage, Ventilator to Structure 1

Lithic Type	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	30.8	4	30.8	-	-	1	7.7	4	30.8	13	7
Flake	50	32.7	31	20.3	3	2	32	20.9	37	24.2	153	87
Flake, Bifacial Thin	-	-	-	-	-	-	5	100	-	-	5	2
Flake, Sharpening	-	-	-	-	-	-	3	100	-	-	3	1
Flake, Marginal Retouch	1	100	-	-	-	-	-	-	-	-	1	<1
Total	55	31.4	35	20	3	1.7	41	23.4	41	23.4	175	100

single tool was recovered from the assemblage; a complete chalcedony flake exhibits bidirectional marginal retouch yet lacks evidence of utilization. The functional edge exhibited a 45-degree edge angle that is typically associated with reciprocal cutting activities.

*Structures 23 and 27.* Three hundred and ninety-nine lithic artifacts were recovered from the fill and floor features in two keyhole structures (Features 27 and 23) in Study Unit 2 (Table 11.15). The majority of the lithic artifacts were manufactured from chalcedony (46 percent), nonvesicular igneous materials (28 percent), and chert (14 percent). Low frequencies of lithics are represented among the Jemez obsidian (n = 38), quartzite (n = 10), and "other" local (n = 3) material categories.

The entire assemblage represents all stages of core reduction and both expedient and formal tool manufacture. Primary decortication is indicated for chalcedony (5 percent) and nonvesicular igneous (8 percent) whole flakes exhibiting 100 percent dorsal cortex. Flakes with partial dorsal cortex (16 percent) and flakes lacking dorsal cortex (75 percent) indi-

cate both early and later stages of secondary core reduction. Formal tool manufacture is indicated by retouched and prepared platforms within the obsidian (n = 2), nonvesicular igneous (n = 1), and chalcedony (n = 1) material categories. One additional obsidian bifacial thinning flake also indicates bifacial formal tool manufacture. Three quartzite hammerstones and 12 multiplatform cores also indicate that all stages of core reduction are represented. A single chalcedony bipolar flake may indicate that this expedient technique of core reduction occurred at the site. Bipolar core reduction techniques are generally used to reduce cores that are too small to be hand held.

Unutilized flakes (79 percent) and unutilized small angular debris (9 percent) compose the majority of the lithic assemblage. The remainder of the assemblage exhibited considerable tool type variability with a total of 20 tools. The assemblage contained both expedient and formal tools. Four expedient flake tools were recovered and exhibit unidirectional scraping wear typical of use on hard media like bone or wood. Two of these tools have com-

Table 11.15. LA 265, SU 2, Lithic Assemblage, Keyhole Structures and Internal Features

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesi- cular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	20	55.6	10	27.8	-	-	-	-	6	16.7	-	-	36
Flake	155	48.6	38	11.9	5	1.6	24	7.5	94	29.5	3	0.9	319	79
Flake, Bifacial Thin	-	-	-	-	-	-	3	75	1	25	-	-	4	1
Flake, Bipolar	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Tested Rock	-	-	-	-	1	50	-	-	1	50	-	-	2	<1
Core, Multiplatform	4	33.3	6	50	-	-	-	-	2	16.7	-	-	12	3
Hammerstone	-	-	-	-	3	100	-	-	-	-	-	-	3	<1
Angular Debris, Utilized	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Flake, Utilized	2	66.7	-	-	-	-	1	33.3	-	-	-	-	3	<1
Flake, Marginal Retouch	1	20	1	20	-	-	-	-	3	60	-	-	5	1
Projectile Point	-	-	-	-	-	-	9	100	-	-	-	-	9	2
Biface	-	-	-	-	-	-	1	50	1	50	-	-	2	<1
Unknown Ground Stone	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Grinding slab	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
<b>Total</b>	<b>183</b>	<b>45.9</b>	<b>55</b>	<b>13.8</b>	<b>10</b>	<b>2.5</b>	<b>38</b>	<b>9.5</b>	<b>110</b>	<b>27.6</b>	<b>3</b>	<b>0.8</b>	<b>399</b>	<b>100</b>

plete functional edges indicating that they were probably used and discarded. The functional edges on two others exhibit truncated wear patterns suggesting that they were used, broken, and discarded. These tools were manufactured from chalcedony (n = 2), Jemez obsidian (n = 1), and nonvesicular igneous materials (n = 1). Five additional flakes exhibit marginal retouch. One flake fragment exhibits two marginally retouched edges, one with unidirectional retouch and evidence of scraping on hard media, and the other with bidirectional retouch but lacking evidence of utilization. Three other flake fragments have unidirectional retouch and one other exhibits bidirectional retouch. Three of these tools exhibit utilization typical of both scraping and cutting on hard media. All but one tool exhibited incomplete functional edges indicating that they were used, broken, and discarded. A single flake with a complete functional edge was most likely used and discarded as well. These tools were manufactured from chalcedony (n = 1), chert (n = 1), and nonvesicular igneous materials (n = 3). Formal tools consist of seven projectile points and four bifaces. Four projectile points are complete, one is a distal tip, another is a proximal base, and one is a medial portion. All projectile points were manufactured from Jemez obsidian. One biface is complete and lacks evidence of utilization. The remaining

biface fragments lacked complete functional edges and were probably broken during manufacture.

The ground stone assemblage contained a whole grinding slab manufactured from fine-grained rhyolite and a fragment of indeterminate ground stone made of fine-grained quartzite.

*Large, Bell-Shaped Pits.* Eight hundred and eighty lithic artifacts were recovered from the large bell-shaped pits in Study Unit 2 (Table 11.16). The majority of the assemblage consisted of chalcedony (42 percent), nonvesicular igneous materials (32 percent), and chert (15 percent). Lower frequencies of Jemez obsidian (n = 63), quartzite (n = 33), and "other" local materials (n = 5) were also recovered.

A variety of reduction and manufacturing trajectories are indicated within various material categories. Both the chalcedony and nonvesicular igneous materials indicate an emphasis on later stages of secondary reduction although some evidence for primary and early stages of secondary reduction is indicated. There is also evidence for formal tool manufacture within these material categories, represented by bifacial thinning flakes and flakes with retouched platforms. The obsidian, on the other hand, lacks evidence of primary core reduction but indicates a distinct emphasis on later stages of secondary reduction with 79 per-

Table 11.16. LA 265, Study Unit 2 Lithic Assemblage, Large Bell-shaped Pits

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	29	50.9	12	21.1	1	1.8	2	3.5	13	22.8	-	-	57
Flake	329	43.0	111	14.5	29	3.8	42	5.5	250	32.6	5	0.7	766	87.0
Flake, Bifacial Thin	2	11.1	-	-	-	-	11	61.1	5	27.8	-	-	18	2.0
Tested Rock	1	50.0	-	-	1	50.0	-	-	-	-	-	-	2	<1
Core, Multiplatform	4	57.1	1	14.3	-	-	-	-	2	28.6	-	-	7	<1
Core, Single Platform	2	100.0	-	-	-	-	-	-	-	-	-	-	2	<1
Hammerstone	-	-	-	-	1	50.0	-	-	1	50.0	-	-	2	<1
Chopper, Unifacial	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Chopper, Bifacial	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Angular Debris, Marginal Retouch	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	2	66.7	1	33.3	-	-	3	<1
Flake, Marginal Retouch	4	44.4	1	11.1	-	-	1	11.1	3	33.3	-	-	9	1.0
Projectile Point	-	-	-	-	-	-	3	100.0	-	-	-	-	3	<1
Biface	-	-	1	33.3	-	-	2	66.7	-	-	-	-	3	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	3	100.0	-	-	3	<1
Grinding slab	-	-	-	-	-	-	-	-	2	100.0	-	-	2	<1
Total	371	42.2	128	14.5	33	3.8	63	7.2	280	31.8	5	0.6	880	100.0

cent of the whole flakes lacking dorsal cortex. Evidence for bifacial formal tool manufacture within obsidian is indicated by bifacial thinning flakes (n = 11). An emphasis on later stages of core reduction and formal tool manufacture is also indicated for chert. A large percent of chert whole flakes lack dorsal cortex and two flakes exhibit retouched platforms. Seven multiplatform cores, two single-platform cores, and a hammerstone were also recovered.

Unutilized flakes (87 percent) and unutilized small angular debris (6 percent) made up the majority of the assemblage. The remainder of the chipped stone assemblage consists of three marginally retouched flakes and a biface manufactured from nonvesicular igneous materials. All three marginally retouched tools exhibit unidirectional retouch—two exhibit unidirectional use wear typical of scraping on hard media. The third marginally retouched flake lacks wear but the functional edge did not appear complete. It is likely that this tool is a manufacturing failure. The biface also lacks wear patterns.

Five ground stone artifacts representing a minimum of four ground stone implements were recovered. Two complete grinding slabs were manufactured from andesite and coarse-grained rhyolite. A fragment of indeterminate ground andesite and an indeterminate frag-

ment of fine-grained rhyolite represent two additional grinding implements.

*Subsurface Extramural Hearths.* Sixty lithic artifacts were recovered from the buried hearths in Study Unit 2 (Table 11.17). The three most abundant lithic materials represented in the assemblage were chalcedony (48 percent), nonvesicular igneous materials (18 percent), and chert (15 percent). Fewer artifacts were manufactured from sandstone (n = 6), Jemez obsidian (n = 4), and quartzite (n = 1).

The assemblage clearly indicates an emphasis on later stages of secondary reduction. Ninety percent of whole flakes lack dorsal cortex and an abundance of single facet platforms (n = 21) are represented. Only three flakes exhibited dorsal cortex. A single nonvesicular igneous flake exhibited a retouched platform indicating bifacial tool manufacture. A Jemez obsidian multiplatform core was also recovered.

Unutilized flakes (70 percent) and unused small angular debris (11 percent) made up the majority of the assemblage. A single projectile point fragment was manufactured from Jemez obsidian. A chopper made of nonvesicular igneous rock was also recovered.

A minimum of one fine-grained sandstone trough metate is indicated by four trough metate fragments and two indeterminate metate fragments. All ground stone fragments were manufactured from fine-grained sandstone.

Table 11.17. LA 265, SU 2, Lithic Assemblage, Buried Hearths

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	3	42.9	2	28.6	-	-	-	-	2	28.6	-	-	7	11.0
Flake	26	61.9	7	16.7	1	2.4	2	4.8	6	14.3	-	-	42	70.0
Flake, Bifacial Thin	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Core, Multiplatform	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Chopper, Unifacial	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	2	100.0	2	3.0
Metate, Trough	-	-	-	-	-	-	-	-	-	-	4	100.0	4	6.0
Total	29	48.3	9	15.0	1	1.7	4	6.7	11	18.3	6	10.0	60	100.0

Table 11.18. LA 265, SU 2, Lithic Assemblage, All Other Extramural Features

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Other Non-local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	28	52.8	9	17.0	1	1.9	6	11.3	9	17.0	-	-	-	-	53	11
Flake	174	43.4	56	14.0	8	2.0	25	6.2	135	33.7	2	0.5	1	0.2	401	83
Flake, Bifacial Thin	-	-	-	-	-	-	2	66.7	1	33.3	-	-	-	-	3	<1
Tested Rock	1	50.0	-	-	1	50.0	-	-	-	-	-	-	-	2	<1	
Core, Multiplatform	3	33.3	2	22.2	1	11.1	-	-	3	33.3	-	-	-	9	1	
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	1	<1	
Flake, Utilized	1	100.0	-	-	-	-	-	-	-	-	-	-	-	1	<1	
Flake, Marginal																
Retouch	2	100.0	-	-	-	-	-	-	-	-	-	-	-	2	<1	
Projectile Point	-	-	-	-	-	-	4	100.0	-	-	-	-	-	4	<1	
Biface	-	-	-	-	-	-	2	100.0	-	-	-	-	-	2	<1	
Total	209	43.7	67	14.0	12	2.5	39	8.2	148	31.0	2	0.4	1	0.2	478	100

*Other Features.* Four hundred and seventy-eight lithic artifacts were recovered from all other features in Study Unit 2 (Table 11.18). The majority of these artifacts were manufactured from chalcedony (44 percent), nonvesicular igneous materials (31 percent), and chert (14 percent). Low frequencies of Jemez obsidian (n = 39), quartzite (n = 12), sandstone (n = 2), and nonlocal black opaque obsidian (n = 1).

The assemblage indicates an emphasis on later stages of secondary core reduction. Eighty-six percent of the assemblage lacked dorsal cortex and 89 percent of the flakes with platforms were either single-faceted (n = 163), collapsed (n = 57), or multifaceted (n = 18). The only primary flakes occurred within the chalcedony (n = 4) material category and evidence for bifacial tool manufacture was found within both the Jemez obsidian and nonvesicular igneous material categories. Both contain bifa-

cial thinning flakes and flakes with retouched platforms.

Unutilized flakes (83 percent) and unutilized small angular debris (11 percent) made up the majority of the assemblage. One utilized flake and two marginally retouched flakes were manufactured from chalcedony. The utilized flake and one marginally retouched flake exhibit unidirectional wear typical of scraping on bone or wood. The length of the use edge on the expedient flake measured only 8 mm. It is likely this tool was used as a spokeshave. The second marginally retouched flake fragment lacked evidence of utilization and did not exhibit a complete functional edge. It is likely that this tool was broken during manufacture. Four projectile points and two bifaces, all manufactured from Jemez obsidian, were also recovered. All but one projectile point were whole. Two of the three whole projectile points

did not exhibit complete functional edges (edges lacking uniformity to carry out a functional task) and may represent manufacturing failures. The third whole point, however, exhibited complete functional edges. It is unclear why this perfectly usable tool entered the archaeological record. One biface was whole while the other was a fragment; both lacked evidence of utilization.

### Fauna

Faunal specimens were analyzed from the keyhole structures, large pits, and other extramural features. These data are presented in Tables 11.19–21. Brief observations concerning species distribution, burning, and taphonomy are presented below.

**Structures 27 and 33.** Fauna was analyzed from only two of the keyhole structures, Structures 27 and 33. Both had small samples

of bone (Table 11.19). While the sample sizes are small and can be unreliable, they are somewhat distinctive and deserve some discussion. Arguing for the assemblage being at least somewhat reliable is the fact that at least three different jackrabbits are represented by parts that range from head to foot. It is not simply the case of an articulated foot or limb contributing to the count. Most unusual is the large amount of jackrabbit relative to cottontail rabbit. When turned into a Lagomorph Index, the index of 0.176 is extremely low. Structure fill for all of LA 265 has an index of 0.72 and for all of Early Developmental period structure fill is 0.73. When proportions are considered, LA 265 has 27.6 percent cottontail and 10.5 percent jackrabbit and the Early Developmental period sites have 31.8 percent cottontail and 9.6 percent jackrabbit. These are far different from the 4.7 percent cottontail and 21.9 percent jackrabbit found in Structure 27. In general, early groups practicing agriculture rely heavily on

Table 11.19. LA 265, Fauna Recovered from Keyhole Structures and Intramural Features

	Structure 27		Feature 41		Feature 47		Total Structure 27		Structure 33	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	3	4.7%	-	-	-	-	3	22.3%	-	-
Medium to large mammal	10	15.6%	-	-	-	-	10	14.9%	-	-
Large mammal	8	12.5%	1	50.0%	-	-	9	13.4%	-	-
Black-tailed prairie dog	1	1.6%	-	-	-	-	1	1.5%	-	-
Yellow-faced pocket gopher	2	3.1%	1	50.0%	1	100.0%	4	6.0%	-	-
Banner-tailed kangaroo rat	1	1.6%	-	-	-	-	1	1.5%	-	-
White-throated woodrat	2	3.1%	-	-	-	-	2	3.0%	-	-
Desert cottontail	3	4.7%	-	-	-	-	3	4.5%	-	-
Black-tailed jackrabbit	14	21.9%	-	-	-	-	14	21.0%	3	60.0%
Dog	1	1.6%	-	-	-	-	1	1.5%	-	-
Badger	1	1.6%	-	-	-	-	1	1.5%	-	-
Bobcat	1	1.6%	-	-	-	-	1	1.5%	-	-
Medium artiodactyl	7	10.9%	-	-	-	-	7	10.4%	-	-
Large artiodactyl	1	1.6%	-	-	-	-	1	1.5%	-	-
Elk	1	1.6%	-	-	-	-	1	1.5%	-	-
Mule deer	2	3.1%	-	-	-	-	2	3.0%	1	20.0%
Pronghorn	1	1.6%	-	-	-	-	1	1.5%	1	20.0%
Mountain sheep	5	7.8%	-	-	-	-	5	7.5%	-	-
Total	64	100.0%	2	100.0%	1	100.0%	67	100.0%	5	100.0%
Immature (1/2-2/3 grown)	2	3.1%	-	-	-	-	-	-	-	-
Burned	15	23.4%	-	-	-	-	-	-	-	-
Complete	3	4.7%	-	-	-	-	-	-	-	-
>75% complete	1	1.6%	-	-	-	-	-	-	-	-
50-75% complete	4	6.3%	-	-	-	-	-	-	2	40.0%
25-50% complete	14	21.9%	-	-	-	-	-	-	1	20.0%
<25% complete	42	65.6%	2	100.0%	1	100.0%	-	-	2	40.0%

Table 11.20. LA 265, Summary of Fauna from the SU 2 Large Bell-Shaped Pits

	Feature 23		Feature 24		Feature 26		Feature 60		Feature 155	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	41	26.6%	63	48.1%	6	11.1%	8	6.5%	-	-
Small to medium mammal	-	-	7	5.3%	2	3.7%	4	3.3%	-	-
Medium to large mammal	7	4.5%	10	7.6%	5	9.3%	16	13.0%	-	-
Large mammal	42	27.3%	-	-	3	5.6%	6	4.9%	1	20.0%
Black-tailed prairie dog	1	0.6%	1	0.8%	-	-	-	-	-	-
Botta's pocket gopher	-	-	-	-	-	-	1	0.8%	-	-
Ord's kangaroo rat	-	-	-	-	4	7.4%	-	-	-	-
Banner-tailed kangaroo rat	2	1.3%	5	3.8%	-	-	-	-	-	-
<i>Peromyscus</i> sp.	-	-	-	-	1	1.9%	-	-	-	-
Woodrats	1	0.6%	-	-	-	-	1	0.8%	-	-
White-throated woodrat	1	0.6%	-	-	-	-	-	-	-	-
cf. Bushy-tailed woodrat	-	-	1	0.8%	-	-	-	-	-	-
Small rodent	-	-	2	1.5%	1	1.9%	1	0.8%	-	-
Medium to large rodent	2	1.3%	1	0.8%	1	1.9%	-	-	1	20.0%
Desert cottontail	31	20.1%	21	16.0%	2	3.7%	1	0.8%	-	-
Black-tailed jackrabbit	6	3.9%	9	6.9%	-	-	2	1.6%	-	-
Medium carnivore	1	0.6%	-	-	-	-	-	-	-	-
Dog	-	-	-	-	5#	9.3%	74*	60.2%	2*	40.0%
Badger	1	0.6%	-	-	-	-	-	-	-	-
Medium artiodactyl	8	5.2%	3	2.3%	1	1.9%	3	2.4%	-	-
Elk	-	-	-	-	15	27.8%	-	-	-	-
Mule deer	-	-	4	3.1%	4	7.4%	3	2.4%	-	-
Pronghorn	1	0.6%	-	-	-	-	-	-	-	-
Mountain sheep	-	-	-	-	-	-	2	1.6%	-	-
Small bird	-	-	1	0.8%	-	-	-	-	-	-
Medium bird	1	0.6%	-	-	-	-	1	0.8%	-	-
Medium to large bird	4	2.6%	-	-	-	-	-	-	-	-
Scaled quail	1	0.6%	-	-	-	-	-	-	-	-
Horned lark	-	-	1	0.8%	-	-	-	-	-	-
Lizards	-	-	2	1.5%	-	-	-	-	-	-
Nonvenomous snakes	-	-	-	-	4	7.4%	-	-	-	-
Frogs and toads	-	-	-	-	-	-	-	-	1	20.0%
Plains or Woodhouse's toad	3*	1.9%	-	-	-	-	-	-	-	-
Total	154	100.0%	131	100.0%	54	100.0%	123	100.0%	5	100.0%
Fetal, neonate	4	2.6%	-	-	-	-	-	-	-	-
Immature (1/2-2/3 grown)	1	0.6%	1	0.8%	4	7.4%	5	4.1%	1	20.0%
Burned	21	13.6%	11	8.4%	2	3.7%	4	3.2%	-	-
Complete	8	5.2%	3	2.3%	20	37.0%	21	17.1%	2	40.0%
>75% complete	4	2.6%	1	0.8%	2	3.7%	2	1.6%	-	-
50-75% complete	5	3.2%	4	3.1%	1	1.9%	8	6.5%	1	20.0%
25-50% complete	16	10.4%	14	10.7%	12	22.2%	9	7.3%	1	20.0%
<25% complete	121	78.6%	109	83.2%	19	35.2%	83	67.5%	1	20.0%
Group Total	154	100.0%	131	100.0%	54	100.0%	123	100.0%	5	100.0%

\* denotes a skeleton counted as one specimen

# four dogs (a fairly complete mature male; a fairly mature dog, a cranium from a 4-6 month old dog, a 4-5 month old fairly complete dog, and a 3-3 month old partial upper body) were recovered from Feature 26 but are not counted in the table

cottontails and when use of jackrabbits increase, it usually accompanies an increase in the human population. At Peña Blanca, the use of more jackrabbits seems to occur when commitment to agriculture is low or when population is high enough to degrade local resources

(see discussion in Akins, Chapter 20).

The amount of artiodactyl bone is also higher than found in most Early Developmental period components. This is evident in both the artiodactyl index and proportions of bone. Structure 27 has an index of 0.5 compared to an



Table 11.21. LA 265, Summary of Fauna from Other SU 2 Features

	Feature 2		Feature 25		Feature 127		Feature 180		Feature 244	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	3	23.1%	14	15.6%	1	100.0%	1	9.1%
Small to medium mammal	-	-	-	-	14	15.6%	-	-	-	-
Medium to large mammal	-	-	1	7.7%	3	3.3%	-	-	-	-
Large mammal	1	100.0%	4	30.8%	10	11.1%	-	-	-	-
Spotted ground squirrel	-	-	-	-	9	10.0%	-	-	-	-
Botta's pocket gopher	-	-	-	-	-	-	-	-	1	9.1%
Banner-tailed kangaroo rat	-	-	1	7.7%	5	5.6%	-	-	-	-
Medium to large rodent	-	-	-	-	2	2.2%	-	-	-	-
Desert cottontail	-	-	2	15.4%	9	10.0%	-	-	4	36.4%
Black-tailed jackrabbit	-	-	1	7.7%	3	3.3%	-	-	3	27.3%
Dog	-	-	-	-	2	2.2%	-	-	-	-
Medium artiodactyl	-	-	-	-	17	18.9%	-	-	1	9.1%
Large artiodactyl	-	-	-	-	-	-	-	-	1	9.1%
Pronghorn	-	-	-	-	1	1.1%	-	-	-	-
Medium bird	-	-	-	-	1	1.1%	-	-	-	-
Lizards	-	-	1	7.7%	-	-	-	-	-	-
Total	1	100.0%	13	100.0%	90	100.0%	1	100.0%	11	100.0%
Fetal, neonate	-	-	-	-	4	4.4%	-	-	-	-
Burned	-	-	1	7.7%	10	11.1%	-	-	1	9.1%
Complete	-	-	-	-	6	6.7%	-	-	-	-
>75% complete	-	-	1	7.7%	3	3.3%	-	-	1	9.1%
50-75% complete	-	-	1	7.7%	2	2.2%	-	-	-	-
25-50% complete	-	-	1	7.7%	3	3.3%	-	-	4	36.4%
<25% complete	1	100.0%	10	76.9%	76	84.4%	1	100.0%	6	54.5%

index of 0.28 for all Early Developmental deposits, 0.38 for structure fill, and 0.32 for extramural deposits (Akins, Chapter 20). Similarly, proportions of deer (3.1 percent) are greater than for all Early Developmental period deposits (1.4 percent), and the same for pronghorn (1.6 and 0.7 percent), mountain sheep (7.8 and 0.3 percent), and medium artiodactyl (10.9 and 8.1 percent). The mountain sheep parts include a tooth, partial sacrum, and three pieces of the same vertebrae.

Carnivores are diverse for such a small sample. The amount of burning is relatively high, 23.4 percent. At this site, with 43 analyzed components, assemblages where 25 percent or more of the bone is burned are the upper fill of SU 1, the SU 4 roof fall, SU 3 Features 15, 35, and the small pits at the edge of Feature 15. The site mean is 15.3 percent. Much of the burning is on large forms: medium to large mammal (n = 2), large mammal (n = 1), medium artiodactyl (n = 2), deer (n = 1), and mountain sheep (n = 2). Burning was also found on the jackrabbit bones (n = 4) and badg-

er (n = 1). Burning ranges from lightly scorched (n = 2) to calcined, with most at least heavily burned (n = 13), suggesting mostly discard burns rather than roasting. Notable exceptions are a scorched jackrabbit cranial fragment and deer rib.

Carnivore gnawing was present on one Feature 27 fill element and one Feature 41 element. Rodent gnawing was present on one from Feature 41. Two fragmentary tools were found in the fill of Feature 27. One is an elk rib with a flat and highly polished end. The other is a long bone fragment. Recorded processing from Feature 27 fill includes a process cut off a portion of a large mammal cranium and chops on the proximal shaft of a tibia. From Structure 33, the deer metatarsal has an impact scar near the distal end.

**Bell-Shaped Pits.** Fauna were analyzed from Features 23, 24, 26, and 60/155. These pits contain considerable domestic debris as well as human and dog inhumations (Table 11.20).

Feature 23 fauna composition reflects

domestic trash used as fill. Taxa are largely rabbits (at least two to three cottontails based on age and a jackrabbit), artiodactyl, and small fragments of the same. A partial femur was from an immature cottontail indicating spring to early fall deposition of that element, and four long bones from a very immature, probably newly hatched bird, again indicating warm weather. The immature bird does not have the same proportions as turkey so it must be some other medium to large-sized bird. The majority of burned bone is rabbit, artiodactyl, and small fragments probably from the same individual. Also present are single pieces of bone with carnivore gnawing and a tooth puncture. Probable scatological bone is fairly common (10.4 percent). A portion of a bead or tube was found in the pit. Recorded processing includes a spiral break on a small mammal long bone shaft, transverse cuts (n = 1) and impacts (n = 3) on large mammal bones, and impacts resulting in bone flakes on two artiodactyl long bones. Preservation was generally good with some pitted (18.2 percent) and some root-etched bone (3.9 percent).

Feature 24 faunal composition also looks like domestic trash that was used as fill. It has more broken bone than the other pit feature assemblages. Four of the deer and two medium artiodactyl specimens are bone tools and tool preforms placed with the human burial. This feature also contained an immature cottontail femur, suggesting warm weather deposition. Again, at least three cottontail rabbits are indicated by age and a single jackrabbit. A small amount of bone (4.6 percent) is possibly scatological. Preservation was generally good. A few bones were pitted (6.1 percent) and root etched (4.6 percent). The only processing noted was transverse cuts on a small mammal long bone shaft.

Feature 26 is unusual because it contains the disarticulated remains of five dog skeletons. Dogs A–E include two mature specimens, one of which was a male, and three juvenile specimens, all less than a year old. Dog B is missing an innominate and both dogs A and B are missing lumbar vertebrae and phalanges. Dogs D and E are missing a right frontal bone.

Also of interest from this pit is the elk bones comprising a set of two each phalanx 1 through 3 from the same foot, four sesamoids, a tarsal, and two each accessory second and third phalanges, suggesting one fairly complete foot and a few extra bones from another. In addition, a tool fragment made from a deer metatarsal was recovered.

Feature 60/155 has bone that is predominantly from the dog inhumations and very little domestic refuse suggesting intentional inhumation in a pit with limited or no previous use. Feature 60 was assigned to a partial 3–4-month-old puppy. Feature 155 was assigned to a mature male. Scattered nonburial immature dog bones could easily be the missing elements from the puppy burial. An awl and a split metacarpal were also present in the pit. One piece of bone has a tooth puncture and four appear scatological. Preservation was generally good with a few pitted (n = 8), checked (n = 12), and etched (n = 6) bones.

**Other Pit Features.** Of the five feature assemblages shown in Table 11.21, only Feature 127 has an appreciable sample size. The other features yielded fewer than 10 animal bones.

Feature 127 is similar to other bell-shaped pits in that it had part of a newborn puppy. The puppy was represented by only a few elements (cranial and a humerus), but other immature pieces of bone recorded as medium to large mammal (n = 2) are probably also part of this puppy. Otherwise, the assemblage is characteristic of domestic trash and deceased burrowing rodents. The burned bone is small mammal, rabbit, and artiodactyl. Four pieces of bone are possibly scat and condition is relatively good with only 16.7 percent pitted. Two pieces of artiodactyl long bone have impact breaks suggesting processing.

### *Summary*

An extramural activity area, covering a 500-sq-m area, contained 43 cultural features and facilities and was assigned Study Unit 2. The features included two possible shallow pit

structures, three extramural hearths with associated fire-cracked rock scatters, four large bell-shaped storage pits (three with intrusive human burials), a fourth human burial in a shallow surface pit, and a variety of other pits, large and small, many of indeterminate function. The structures and pits surround Structure 1 on all but the south-southeast side and they fill the space north of Structure 4, which may post-date Structures 1, 27, and 33. Sequence of use and potential temporal-functional associations between Structures 1, 4, 27, and 33 and the extramural features could not be made from stratigraphic or artifactual evidence. The occupation surface elevation was similar for all features indicating that they were roughly contemporaneous within the 100-year period indicated by archaeomagnetic and radiocarbon dates. Chronometric dating suggests that Structures 27 and 33 pre-dated Structures 1 and 4.

The array of pit features represent an unknown sample of features that were removed by road construction to the east and remain unexcavated outside the project corridor to the west. They may be associated with both a small-scale seasonal occupation represented by the keyhole structures, and a full-scale year-round occupation represented by Structures 1 and 4. Spatial distribution of thermal, pit, storage, and burial features suggests activity area organization. In the southeast quarter of Study Unit 2, features are predominantly large, straight-walled, or basin-shaped pits with one burial pit. Feature 180 covered 3.5 sq m and may have been roofed, but open outdoor work space. The southeast area contrasts with the southwest area, which is dominated by thermal features and fire-cracked rock concentrations or discard areas. These were medium or single-household-sized thermal features. Finally, in the northwest quarter of Study Unit 2, bell-shaped and straight-walled storage or processing pits dominated. Two contained human burials and a third contained a dog burial. These may have functioned as storage prior to interment, but that could not be substantiated from morphological or use

evidence. Intermediate to these three areas are the pocket structures, Structure 27 and 33.

Spatial organization of the three feature areas suggest anticipated long-term or permanent occupation and year-round occupation. The spatially segregated accumulations suggest long-term site occupation that resulted in the production, reuse, and replacement of features and facilities and the transformation of storage features into interment features as settlement longevity coincided with inhabitant mortality. LA 265 and LA 6171 evidence this pattern with a combination of pit and pithouse burials. While LA 6171 had no burials within the excavated space, LA 6169 had predominantly pithouse burials. LA 115862 had all extramural pit burials. The mixed interment practice may represent the longest occupation of a site.

### STUDY UNIT 3

Study Unit 3 consists of a large concentration of pits of varying size and depth, many of which are associated with quantities of fire-cracked rock. The unit encompasses a rectangular area approximately 416 sq m in extent, from grid 473N to 499N, and from 488E to 504E north of Study Unit 2 in Area 1 (Fig. 11.2). Study Unit 3 was stripped by hand and with the aid of a mechanical backhoe, revealing a total of 32 cultural features (Fig. 11.17). Most of these are pits of varying size and complexity. The area also includes the ventilator shaft and a portion of the vent tunnel for a large unexcavated pit structure (Feature 10) located just outside the western project limits. The majority of features associated with Study Unit 3 appear to have functioned in various food processing or storage activities. The area of highest feature density (Feature 3) consisted of a series of deep, overlapping pits that are associated with large quantities of fire-cracked rock, charcoal, and wood ash. Extensive evidence of pit abandonment, trash filling, and remodeling suggests that the area supported food processing activities for many years. A complex of 15 features made up Feature 3.

### Feature 3

Feature 3 was noted when foot traffic during surface collection and grid layout activities displaced the loose upper sands and revealed darker carbon-stained sediments. Excavation in 1-by-1-m grid units removed the upper sands, revealing a 6.4-by-5.6-m exposure of 10YR 3/2 very dark grayish brown, carbon-stained silty loam with charcoal and large amounts of pumice. Slightly irregular but generally round in plan view, it was thought to be the uppermost exposure of a pit structure and was designated Feature 3. Excavation units, eventually totaling 38, yielded large amounts of artifacts, cobbles, fire-cracked rock, and both burned and unburned adobe fragments. In many grid units, especially along the perimeter, the carbon-stained sands gave way to sterile subsoil within a few centimeters, and the edges of smaller pits appeared. Excavation then focused on an east-west grid line (485N/496-499E). These were dug in 10-cm arbitrary levels, but layers of cobbles, fire-cracked rock, and melted adobe were encountered. In places these resembled walls or floors, but they were discontinuous and efforts to define them were futile. The line of grid units was turned into a hand-dug trench in hopes that the resulting profiles would be more enlightening. At that point screening and collecting artifacts in these grid units was halted. The resulting profiles, A-A' (the 486N grid line) and B-B' (the 485N grid line), are illustrated in Figure 11.18. The profiles revealed that Feature 3 was not a pit structure after all. The west end of the trench revealed a large, deep, storage pit (Feature 14) with a shallow pit adjacent to the east (Feature 35). Feature 35 only appeared in the north profile, but Feature 14 was observed in both. After the south half of Feature 14 was excavated by natural strata, two north-south trenches were excavated (482-484N/497E and 482-484N/499E) to investigate the remainder of Feature 3. Both of these trenches were excavated in 1-by-1-m grid units according to natural stratigraphy whenever possible. All profiles were drawn and photographed. The 497E

trench revealed another large, deep, storage pit (Feature 15), while the 499E trench revealed a larger but shallower storage pit (Feature 34). It finally became clear that Feature 3 was not in fact a true feature, but an artifact-rich deposit overlying a complex of unburned pits (Fig. 11.18).

Artifacts recovered from the upper portion of Feature 3 included 398 lithics, ceramics, bone, and charcoal in large quantities. Many fire-cracked rock and cobbles were noted but few were counted or weighed. Out of the sample of recovered lithics analyzed, both formal and informal tools, cores, and ground stone were identified (see Table 11.22).

Three hundred and ninety-eight lithic artifacts were recovered from the upper ash. Chalcedony (45 percent) and nonvesicular igneous materials (43 percent) made up the majority of the assemblage. Lower frequencies of chert ( $n = 24$ ), quartzite ( $n = 12$ ), Jemez obsidian ( $n = 9$ ), vesicular igneous material ( $n = 1$ ), and "other" local material ( $n = 1$ ) were also present.

The assemblage indicates all stages of core reduction and formal tool manufacture; however, an emphasis on later stages of core reduction is also evident. Of the whole flakes, 78 percent lack dorsal cortex. Eight multiplatform cores were identified in the assemblage. Four were manufactured from chalcedony and four others from nonvesicular igneous materials. A single-platform chalcedony core was also recovered.

Unutilized flakes (85 percent) and unutilized small angular debris (9 percent) represent the majority of the assemblage. Two expedient flakes and a piece of small angular debris were recovered from this provenience. They are manufactured from chalcedony and all exhibited unidirectional wear typical of scraping on hard media like bone or wood. Other formal tools are a chert projectile point and a biface fragment—both lack evidence of use wear.

Fragments from two indeterminate metates were made from vesicular rhyolite and schist. A quartzite mano fragment and a fine-grained rhyolite stone ball were also recovered.

Table 11.22. LA 265, SU 3, Feature 3, Upper Ash Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	20	55.6	2	5.6	3	8.3	-	-	11	30.6	-	-	-	-	36
Flake	151	44.2	19	5.6	8	2.3	8	2.3	156	45.6	-	-	-	-	342	85
Tested Rock	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	2	<1
Core, Multiplatform	4	50.0	-	-	-	-	-	-	4	50.0	-	-	-	-	8	2
Core, Single Platform	1	100.0	-	-	-	-	-	-	-	-	-	-	-	1	<1	
Angular Debris, Utilized	1	100.0	-	-	-	-	-	-	-	-	-	-	-	1	<1	
Flake, Utilized	2	100.0	-	-	-	-	-	-	-	-	-	-	-	2	<1	
Projectile Point	-	-	1	50.0	-	-	1	50.0	-	-	-	-	-	2	<1	
Mano, Unknown	-	-	-	-	1	100.0	-	-	-	-	-	-	-	1	<1	
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	50.0	1	50.0	2	<1
Stone Ball	-	-	-	-	-	-	-	-	1	100.0	-	-	-	1	<1	
Total	179	45.0	24	6.0	12	3.0	9	2.3	172	43.2	1	0.3	1	0.3	398	100

**Pit Complex Below Feature 3.** Beneath Feature 3 was a complex of trash-filled pits, which represented sustained reuse of the area for storage and subsequently for trash disposal. Many of these pits were excavated into the fill of others, resulting in a very convoluted stratigraphy (Fig. 11.18). This complex consisted of four very large pits (Features 14, 15, 34, and 35), and 11 smaller secondary pits (Features 16, 36 [2 pits], 37, 38, 44, 99, 149, 151, 153, and 168). A turkey burial (Feature 19) was encountered in the fill of Feature 15. Oxidation was not noted in any of the features. With the exception of Feature 19, they all appeared to have had storage or storage-related functions.

The secondary pits, located on the edges or between the four larger pits, could be categorized as two types. Six were fairly deep, with steep walls and a concave base. These were all on the margins of the larger pits, and included Features 37, 44, 99, 149, 151, and 153. The other five pits were shallower and basin-shaped with gently sloping walls and bases. They included the two pits of Feature 36, and Features 38 and 168. These secondary pits generally originated at or above the origination of their associated large pits and their bases were at a much higher elevation than those of the larger pits.

These secondary pits appear to be large pot or basket rests along the upper margins of and associated with the larger storage pits. In many of the pits, the wall closest to the large pit was shorter than the opposing wall, suggesting a scenario of someone standing in the

large pits, filling containers and lifting them up and onto these secondary pits.

Most of the features contained only one stratum of fill, although some of the larger pits had six to eight strata. Almost all of the strata appear to contain construction/remodeling debris. Many of these fill strata appear to be nearly identical, with only slight variations in color, texture, charcoal content and presence/absence of adobe fragments (some burned) differentiating them. By pulling unprocessed flotation and pollen samples, an attempt to standardize the descriptions was made in the lab. The similarities between many of the strata suggest that massive remodeling or construction activities occurred on other portions of the site and the resultant detritus was used to fill the features in this area, which appear to have been abandoned within a short timeframe.

Five of these secondary pits had fill similar to that of Feature 7 just to the north. Feature 44, Stratum 1 and Feature 149 contained 10YR 4/2 dark grayish brown loams with pumice charcoal and adobe chunks (some of which were noted as burned). Feature 36; Feature 37, Stratum 1; and Feature 38 were similar but lacked pumice. This suggests a closing contemporaneous with that of Feature 7, possibly later than the others. The others contained fills similar to various strata within their adjacent large pit.

*Feature 14.* Feature 14, the northwestern large pit, was the first to be defined, having been exposed in the profiles of the 485N trench.

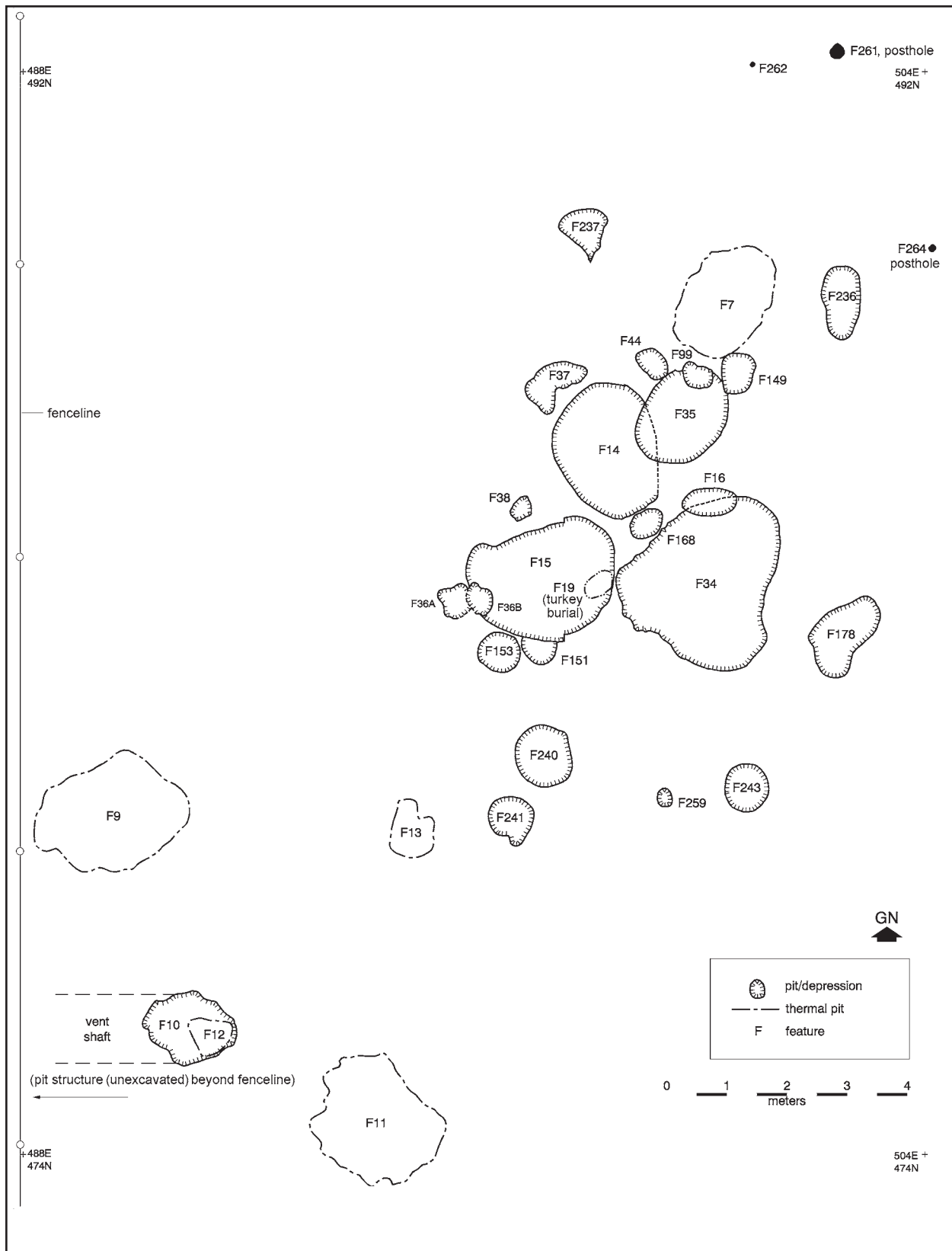


Figure 11.17. Study Unit 3, plan view feature distribution.

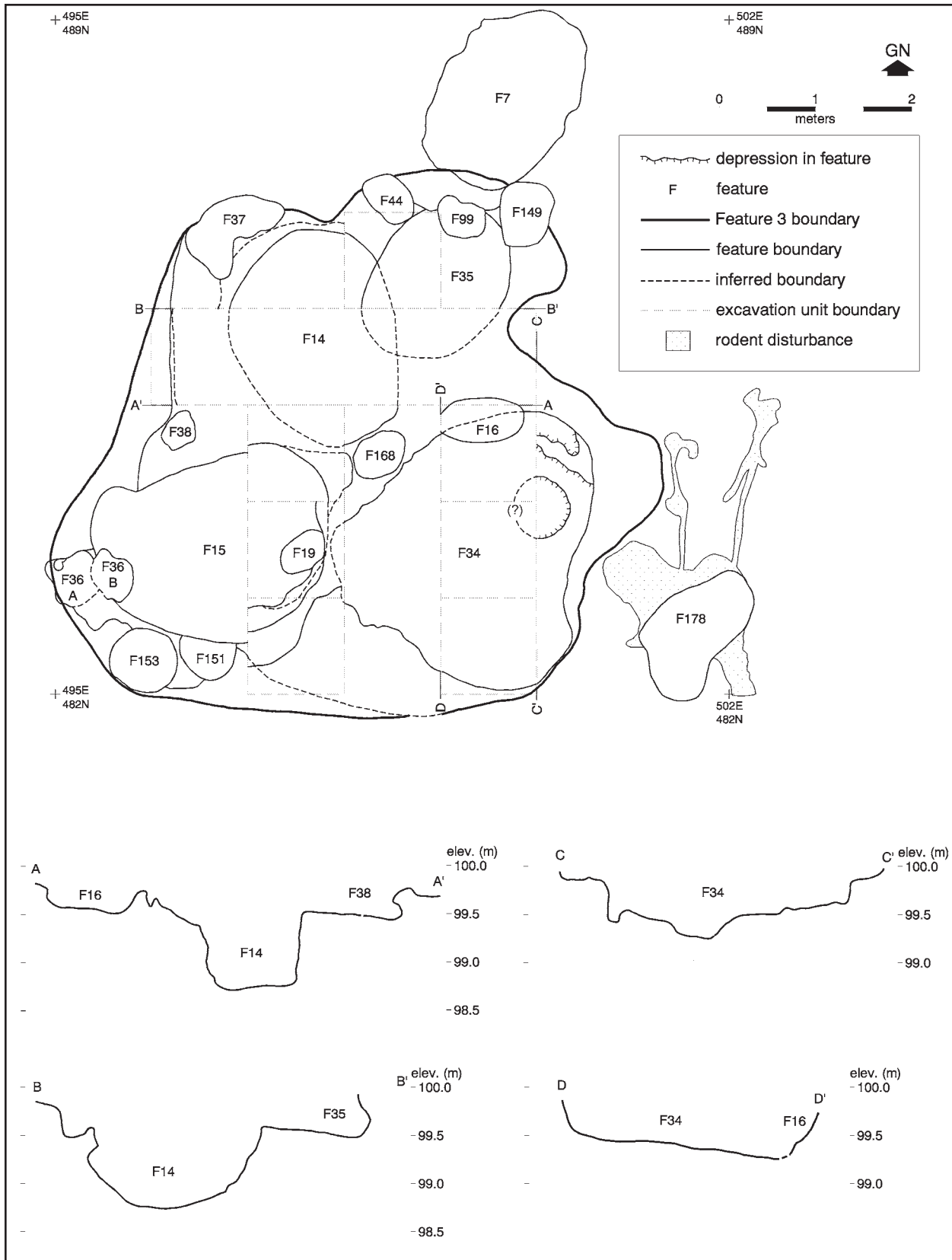


Figure 11.18. Study Unit 3, Feature 3, pit complex.

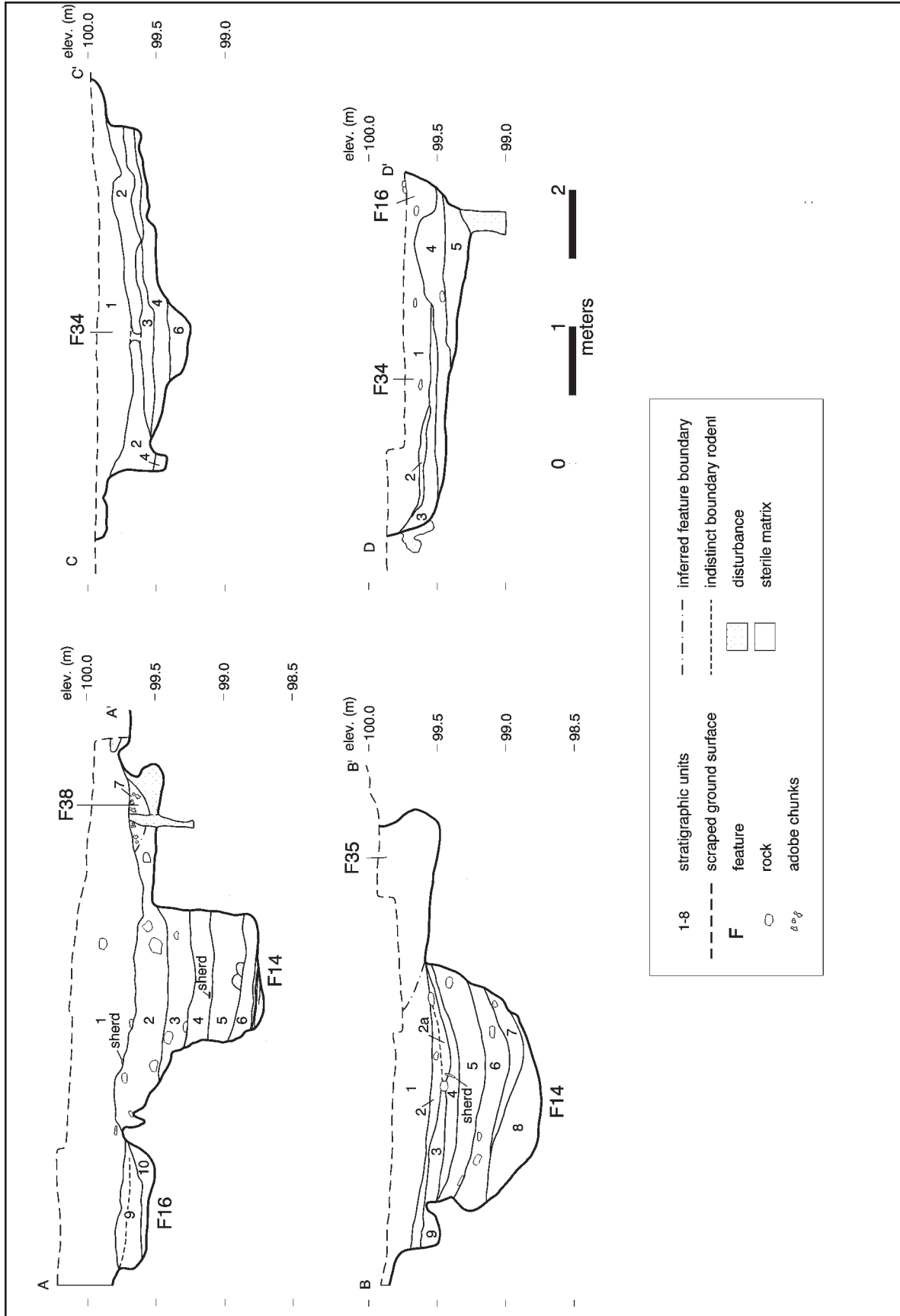


Figure 11.19. Profiles, Features 14 and 34.



It measured 225-by-170-by-84 to 108 cm, a northwest-southeast-oriented oval. Slightly less than half of the feature had been removed by the exploratory backhoe trench. The remaining north and south portions were dug by natural stratigraphic units, which had been defined in the A-A' and B-B' profiles (Fig. 11.19). The northern profile, A-A', exhibited a bowl-shaped profile with eight strata of fill. The southern profile, B-B', contained five strata with more vertical walls and a flatter floor. Only the deepest stratum (Stratum 6 in the south, Stratum 8 in the north) appeared in both profiles. The others appeared in only one of the profiles, and most were sloping or otherwise not flat in profile. Most of the strata contain construction/remodeling debris (Fig. 11.20), but the lowest stratum appears to be an alluvial deposit, suggesting that the pit sat abandoned for some time before it was filled with cultural material. This alluvium was not observed in any of the other pits. The differences in the profiles suggest that the backfilling episodes appear to have consisted of small amounts of fill that were not distributed evenly across the feature.

Although the profiles do not accurately reflect this, after excavation the exposed north and south walls of Feature 14 were bell-shaped. It was similar to, but much larger than Features 23, 24, 26, and 60 in Study Unit 2. If Feature 14 originally had a small opening like those features, it must have been knocked in and enlarged at some point after abandonment, possibly for ease of backfilling. The resulting pieces of sterile subsoil that would have fallen into the fill of the features may have been mistakenly identified as the adobe chunks, which were noted in many of the fill strata.

A very large amount of cobbles and fire-cracked rock was encountered. Although not all the rock was counted and weighed, 48 pieces of fire-cracked rock weighing 14 kg and 70 cobbles weighing 49.5 kg were recorded. The total counts for the entire feature could easily have been up to twice as high. A pollen column was taken from both the A-A' and B-B'

profiles.

Artifacts recovered included 129 lithics, 97 ceramics, 50 pieces of animal bone, and charcoal. Assemblages are summarized and distribution data are presented in the accompanying tables. Only 129 of the lithics were analyzed (see Table 11.23). Fauna included small mammal, rabbit, and prairie dog, medium mammal, and large mammal including artiodactyl (see Table 11.26).

The ceramic distribution was typical of domestic refuse deposited within pithouse depressions: 90 percent was Middle Rio Grande Plain (Tables 11.24, 11.25). Few decorated sherds were recovered and the majority of the nonlocal types were from the Mogollon area. Vessel forms included jar body sherds, with an unusually high proportion of neck sherds (17 percent) suggesting deposition of



Figure 11.20. Study Unit 3, Feature 14 stratigraphy.

Table 11.23. LA 265, SU 3, Feature 14 Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	2	28.6	-	-	1	14.3	-	-	4	57.1	-	-	-	-	7
Flake	40	37.0	7	6.5	5	4.6	3	2.8	51	47.2	1	0.9	1	0.9	108	83
Core, Multiplatform	-	-	3	60.0	-	-	-	-	2	40.0	-	-	-	-	5	3
Chopper, Bifacial	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Angular Debris, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	1	33.3	-	-	-	-	-	-	2	66.7	-	-	-	-	3	2
Flake, Marginal Retouch	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	3	2
Stone Ball	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Total	44	34.1	10	7.8	6	4.7	3	2.3	64	49.6	1	0.8	1	0.9	129	100

Table 11.24. LA 265, SU 3, Large and Small Pits, Ceramic Type Distributions

	528: SU 3, Feature 7	530: SU 3, Feature 14, NW Large Pit	531: SU 3, Feature 15, SW Large Pit	532: SU 3, Feature 34, SE Large Pit	533: SU 3, Feature 35, NE Large Pit	534: SU 3, Small Pits on the Edge of Feature 14	535: SU 3, Small Pits on the Edge of Feature 35
Unpainted undifferentiated	-	1	-	-	-	-	-
	-	1.00%	-	-	-	-	-
NRG Mudware	-	-	-	2	-	-	-
	-	-	-	1.90%	-	-	-
MRG Plain rim	7	2	8	4	-	-	-
	3.10%	2.10%	4.00%	3.70%	-	-	-
MRG Plain body	204	87	177	95	31	5	2
	90.70%	89.70%	87.60%	88.80%	86.10%	83.30%	100.00%
Wide Neckbanded (wiped)	1	-	-	-	-	-	-
	0.40%	-	-	-	-	-	-
MRG Unpainted undifferentiated	-	1	1	-	-	-	-
	-	1.00%	0.50%	-	-	-	-
MRG Mineral Paint (undiff)	1	-	-	-	-	-	-
	0.40%	-	-	-	-	-	-
San Marcial Black-on-white	-	1	1	2	-	1	-
	-	1.00%	0.50%	1.90%	-	16.70%	-
Slipped Red over white paste (Tallahogan-like)	7	1	4	1	4	-	-
	3.10%	1.00%	2.00%	0.90%	11.10%	-	-
Slipped over red paste	-	2	1	-	-	-	-
	-	2.10%	0.50%	-	-	-	-
MRG Local Brown Ware	-	-	2	-	-	-	-
	-	-	1.00%	-	-	-	-
Kana'a Black-on-white	-	-	1	-	-	-	-
	-	-	0.50%	-	-	-	-
Jornada Brown body	2	-	1	1	-	-	-
	0.90%	-	0.50%	0.90%	-	-	-
Mogollon Red-on-brown	-	1	2	-	-	-	-
	-	1.00%	1.00%	-	-	-	-
San Francisco Red	3	1	2	1	1	-	-
	1.30%	1.00%	1.00%	0.90%	2.80%	-	-
Alma Plain body	-	-	1	1	-	-	-
	-	-	0.50%	0.90%	-	-	-
Reserve Smudged	-	-	1	-	-	-	-
	-	-	0.50%	-	-	-	-
Total	225	97	202	107	36	6	2
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

NRG = Northern Rio Grande; MRG = Middle Rio Grande

large portions of vessels. Bowl body and rim sherds reflect the domestic nature of the deposit. Cooking, as evidenced by sooting and abrasion, was 9 percent of the assemblage.

One hundred and twenty-nine lithic arti-

facts were recovered from Feature 14 (Table 11.23). The majority of the assemblage was made up of nonvesicular igneous materials (50 percent) and chalcedony (34 percent). Low frequencies of chert (n = 10), Jemez obsidian (n =

Table 11.25. LA 265, SU 3, Extramural Feature Ceramics

	537: SU 3 - Small Pits on the edge of Feature 15	538: SU 3 - Vent Shaft to Unexcavated Pit Structure	539: SU 3- Hearths/ Roasting Pits	540: SU 3 - All Other Features	541: SU 9 - Vent Shafts and Tunnels to SU 4	542: SU 9 - Upper Hearth
NRG Mudware	-	-	1 0.50%	-	-	-
MRG Plain rim	3 13.60%	2 2.10%	-	2 3.00%	2 2.60%	-
MRG Plain body	19 86.40%	90 92.80%	175 92.10%	61 91.00%	72 92.30%	4 80.00%
MRG Unpainted undifferentiated	-	-	2 1.10%	2 3.00%	-	1 20.00%
MRG Mineral Paint (undiff)	-	-	-	-	1 1.30%	-
San Marcial Black-on-white	-	-	4 2.10%	1 1.50%	1 1.30%	-
Slipped Red over white paste Tallahogan-like	-	-	5 2.60%	1 1.50%	2 2.60%	-
Slipped over red paste	-	1 1.00%	-	-	-	-
Jornada Brown body	-	-	1 0.50%	-	-	-
San Francisco Red	-	4 4.10%	1 0.50%	-	-	-
Alma Plain body	-	-	1 0.50%	-	-	-
Total	22 100.00%	97 100.00%	190 100.00%	67 100.00%	78 100.00%	5 100.00%

NRG = Northern Rio Grande; MRG = Middle Rio Grande

3), sandstone (n = 1) and "other" local material (n = 1) were recovered.

The overall assemblage indicates an emphasis on later stages of secondary core reduction. Of the whole flakes, 75 percent lack dorsal cortex; 69 percent of flakes with platforms were single faceted (n = 41) or multifaceted (n = 10). The chalcedony material group exhibits evidence for primary reduction as well. Four multiplatform cores made from chert and nonvesicular igneous materials were also recovered. There is no evidence that formal tool manufacture occurred in this area.

Unutilized flakes (83 percent) and unutilized small angular debris (5 percent) make up the majority of the lithic assemblage. Three medial portions of marginally retouched flakes were manufactured from nonvesicular igneous materials—two exhibit unidirectional scraping wear typical of scraping on hard media like bone or wood, and a third had bidirectional retouch but lacks evidence of utilization. None of the functional edges was complete. It is likely that the two scraping tools were broken dur-

ing use. A marginally retouched piece of small angular debris, made of chalcedony, also exhibited unidirectional wear typical of scraping on hard media. Again, its functional edge was incomplete indicating it was probably broken during use and discarded. Three additional utilized flakes exhibit both unidirectional scraping and bidirectional cutting wear—all typical of use on hard media. A single fine-grained rhyolite stone ball was also recovered. No ground stone was recovered.

Feature 14 fauna was characterized by an unusually high jackrabbit proportion (Table 11.26). Parts included crania, vertebra, front and hind limbs with no more than one rabbit indicated. Just over half of the jackrabbit bone is burned, ranging from scorched to calcined. The cottontail rabbit includes one very young rabbit indicating warm weather deposition. The pronghorn is represented by part of a foot consisting of the distal tibia and several tarsals. One piece of bone is carnivore gnawed. Potential processing includes an artiodactyl long bone with an impact break and a small

Table 11.26. LA 265 Summary of Fauna from SU 3

	Feature 7		Feature 9		Feature 10		Feature 11		Feature 14		Feature 15/19	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-lrg bird	-	-	-	-	-	-	-	-	2	4.0%	1	0.4%
Small mammal	6	27.3%	4	17.4%	1	25.0%	8	42.1%	11	22.0%	43	18.9%
Small to medium mammal	-	-	-	-	-	-	-	-	1	2.0%	-	-
Medium to large mammal	3	13.6%	6	26.1%	1	25.0%	1	5.3%	4	8.0%	6	2.6%
Large mammal	5	22.7%	2	8.7%	2	50.0%	4	21.1%	4	8.0%	1	0.4%
Gunnison's prairie dog	-	-	-	-	-	-	-	-	-	-	-	-
Botta's pocket gopher	-	-	-	-	-	-	1	5.3%	-	-	1	0.4%
Woodrats	-	-	-	-	-	-	1	5.3%	-	-	3	1.3%
White-throated woodrat	-	-	-	-	-	-	-	-	-	-	1	0.4%
cf. Bushy-tailed woodrat	-	-	-	-	-	-	-	-	-	-	-	-
Medium to large rodent	-	-	-	-	-	-	1	5.3%	-	-	-	-
Desert cottontail	1	4.5%	-	-	-	-	1	5.3%	4	8.0%	118	51.8%
Black-tailed jackrabbit	-	-	1	4.3%	-	-	-	-	13	26.0%	40	17.5%
Dog, coyote, wolf	1	4.5%	-	-	-	-	1	5.3%	-	-	-	-
Dog	-	-	-	-	-	-	-	-	-	-	-	-
Medium artiodactyl	5	22.7%	7	30.4%	-	-	-	-	3	6.0%	9	3.9%
Elk	-	-	-	-	-	-	-	-	-	-	1	0.4%
Mule deer	1	4.5%	-	-	-	-	-	-	1	2.0%	-	-
Pronghorn	-	-	-	-	-	-	-	-	5	10.0%	-	-
Large bird	-	-	-	-	-	-	-	-	1	2.0%	-	-
Turkey	-	-	-	-	-	-	-	-	-	-	1*	0.4%
Nonvenomous snakes	-	-	1	4.3%	-	-	-	-	-	-	-	-
Frogs and toads	-	-	2	8.7%	-	-	-	-	-	-	-	-
Plains or Woodhouse's toad	-	-	-	-	-	-	1*	5.3%	-	-	-	-
Red spotted toad	-	-	-	-	-	-	-	-	-	-	1*	0.4%
Woodhouse toad	-	-	-	-	-	-	-	-	1	2.0%	2*	0.9%
Total	22	100.0%	23	100.0%	4	100.0%	19	100.0%	50	100.0%	228	100.0%
Fetal, neonate	-	-	-	-	-	-	-	-	1	2.0%	-	-
Immature (1/2-2/3 grown)	1	4.5%	-	-	-	-	-	-	1	2.0%	3	1.3%
Burned	3	13.6%	4	17.4%	3	75.0%	6	31.6%	12	24.0%	69	30.3%
Complete	1	4.5%	1	4.3%	-	-	1	5.3%	5	10.0%	13	5.7%
>75% complete	-	-	1	4.3%	-	-	-	-	2	4.0%	7	3.1%
50-75% complete	-	-	1	4.3%	-	-	-	-	-	-	4	1.8%
25-50% complete	1	4.5%	1	4.3%	-	-	2	10.5%	2	4.0%	50	21.9%
<25% complete	20	90.9%	19	82.6%	4	100.0%	16	84.2%	41	82.0%	154	67.5%

mammal rib with one end cut off. Also unusual is the presence of two mat weaving tools in this pit.

*Feature 37.* Feature 37 was a secondary pit located on the northwest edge of Feature 14 (Fig. 11.14). The Feature 3 plan view showed it to be an irregular northeast-southwest-oriented oval, measuring 110-by-62-by-35 cm. The feature did appear in several photographs in which it looked like two adjacent circular pits without a wall separating them. The southwest half appears to be deeper than the northeast half. Both halves had very steep, almost vertical walls with concave bases.

The feature contained two strata of fill. Stratum 1 was a 10YR 4/2 dark grayish brown loam, similar to that of Features 36 and 38. Stratum 2 consisted of a 10YR 6/3 pale brown loam, similar to Stratum 3 in the north half of

Feature 14. Although it was unclear from the limited documentation, it is possible that Stratum 2 was only found in the deeper southwest portion of the feature.

Low artifact frequencies were recovered. Artifact counts include six ceramics, five flaked lithics and a stone ball, one animal bone, and charcoal. Little can be discerned from the artifact assemblage, except that it appears to have been washed or blown in following feature abandonment.

*Feature 15.* Feature 15 was the southwesternmost of the four major pits in the Feature 3 pit complex (Fig. 11.21). A very large northeast-southwest-oriented oval, 250-by-185-by- 50-90-cm deep, it was encountered as the 497E trench was dug. After the fill of Feature 14 was removed from the northeast corner of the 484N/497E grid unit, the remainder of that unit

Table 11.26. Continued.

	Feature 34		Feature 35		Feature 36		Feature 37		Feature 38		SU 3 Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-lrg bird	-	-	-	-	-	-	-	-	1	9.1%	4	1.0%
Small mammal	1	5.3%	2	18.2%	-	-	-	-	-	-	76	19.4%
Small to medium mammal	-	-	-	-	-	-	-	-	-	-	1	0.3%
M-L mammal	3	15.8%	-	-	-	-	-	-	-	-	24	6.1%
Large mammal	-	-	-	-	-	-	-	-	-	-	18	4.6%
Gunnison's prairie dog	9*	47.4%	-	-	-	-	-	-	-	-	9	2.3%
Botta's pocket gopher	-	-	-	-	-	-	-	-	-	-	2	0.5%
Woodrats	-	-	-	-	-	-	-	-	-	-	4	1.0%
White-throated woodrat	-	-	-	-	-	-	-	-	-	-	1	0.3%
cf. Bushy-tailed woodrat	-	-	-	-	-	-	1	100.0%	-	-	1	0.3%
Medium to large rodent	-	-	-	-	-	-	-	-	-	-	1	0.3%
Desert cottontail	2	10.5%	7	63.6%	1	25.0%	-	-	4	36.4%	138	35.2%
Black-tailed jack rabbit	4	21.1%	2	18.2%	-	-	-	-	3	27.3%	63	16.1%
Dog, coyote, wolf	-	-	-	-	-	-	-	-	-	-	2	0.5%
Dog	-	-	-	-	1	25.0%	-	-	-	-	1	0.3%
Medium artiodactyl	-	-	-	-	1	25.0%	-	-	3	27.3%	28	7.1%
Elk	-	-	-	-	-	-	-	-	-	-	1	0.3%
Mule deer	-	-	-	-	1	25.0%	-	-	-	-	3	0.8%
Pronghorn	-	-	-	-	-	-	-	-	-	-	5	1.3%
Large bird	-	-	-	-	-	-	-	-	-	-	1	0.3%
Turkey	-	-	-	-	-	-	-	-	-	-	1	0.3%
Nonvenomous snakes	-	-	-	-	-	-	-	-	-	-	1	0.3%
Frogs and toads	-	-	-	-	-	-	-	-	-	-	2	0.5%
Plains or Woodhouse's toad	-	-	-	-	-	-	-	-	-	-	1	0.3%
Red spotted toad	-	-	-	-	-	-	-	-	-	-	1	0.3%
Woodhouse toad	-	-	-	-	-	-	-	-	-	-	3	0.8%
Total	19	100.0%	11	100.0%	4	100.0%	1	100.0%	11	100.0%	392	100.0%
Fetal, neonate	-	-	-	-	1	25.0%	-	-	-	-	2	0.5%
Immature (1/2-2/3 grown)	-	-	-	-	-	-	-	-	-	-	5	1.3%
Burned	1	5.3%	5	45.4%	1	25.0%	-	-	1	9.1%	105	26.8%
Complete	5	26.3%	1	9.1%	1	25.0%	-	-	2	18.2%	30	7.7%
>75% complete	-	-	-	-	1	25.0%	-	-	-	-	11	2.8%
50-75% complete	-	-	-	-	-	-	-	-	-	-	5	1.3%
25-50% complete	4	21.1%	5	45.5%	-	-	1	100.0%	2	18.2%	68	17.3%
<25% complete	10	52.6%	5	45.5%	2	50.0%	-	-	7	63.6%	278	70.9%

\* denotes a skeleton counted as one element

was removed as a single level, 37–100 cm of fill. This removed the northeast corner of Feature 15 and exposed its fill in both a north-south and east-west profile (Fig. 11.21). These profiles were used to guide the subsequent excavation by natural stratigraphic units of the 497E/483N and 482N grid units. The fill consisted of seven strata. Only two of the strata do not extend across all or most of the feature. As the upper portion of the west half was defined, Features 36, 151, and 153 were observed and excavated (Fig. 11.18). The remainder of the feature was excavated by natural stratigraphic units.

The walls of this feature were irregular. The north and east walls were mostly vertical, but slightly bell-shaped. This was not as pronounced as in Feature 14. The south wall had a shelf, measuring 40 cm wide and 65 cm above the floor, which reduced the north-south diam-

eter to 145 cm. The west wall had a gradual downward slope, from the level of origination to the base of the pit. At first glance, it appeared to have been the collapse of the upper portion of the feature, but Pit B of Feature 36 had been dug into it. Additional probing after excavation did not indicate the presence of fill behind or below the wall. Like Feature 14, this pit may have had a much smaller opening during its period of use. Its enlargement could account for the presence of "sterile blocky structures" described in many of the strata.

A large number of cobbles and fire-cracked rock were noted. While not counted and weighed in all grid units, 227 pieces weighing 102 kg were recorded. The total counts were probably much higher. Flotation and pollen samples were taken from the stratigraphic col-

umn of fill. Artifacts recovered included 225 lithics, 202 ceramics, 228 pieces of bone, and charcoal, but no ground stone. Of the bone analyzed, three were classified as isolated human adult cranial case fragments. One was a positive identification, but the other two were more tentative. They do not appear to have come from any of the excavated burials on the site.

Analyzed from Feature 15 were 202 ceramics (Table 11.24). The ceramic type distribution is similar to domestic refuse recovered from structure fill. Middle Rio Grande Plain predominates with a consistent but low frequency occurrence of Mogollon region types including Alma Plain, San Francisco Red, Mogollon Red-on-brown, and Reserve Smudged. Vessel forms included jar body sherds, with an

unusually high proportion of neck sherds (23 percent) suggesting deposition of large portions of vessels. Bowl body and rim sherds reflects the domestic nature of the deposit. Cooking, indicated by sooting and abrasion, was 6 percent of the assemblage.

Recovered from Feature 15, a large pit in Study Unit 3, were 225 lithic artifacts (Table 11.27). Equal amounts of chalcedony (41 percent) and nonvesicular igneous materials (41 percent) were recovered. Small amounts of chert ( $n = 19$ ), Jemez obsidian ( $n = 13$ ), quartzite ( $n = 6$ ), and "other" local materials ( $n = 1$ ) were also recovered.

The assemblage indicates an emphasis on both early and later stages of secondary core reduction. Seventy-one percent of the whole flakes lack dorsal cortex and 23 percent exhibit only partial dorsal cortex. Fourteen multiplatform cores were recovered from this provenience. Most were manufactured of nonvesicular igneous materials ( $n = 5$ ), chalcedony ( $n = 4$ ), chert ( $n = 3$ ), and Jemez obsidian ( $n = 2$ ). A single bifacial thinning flake made of nonvesicular igneous materials indicates some evidence for formal tool manufacture.

Unutilized flakes (86 percent) and unutilized small angular debris (5 percent) make up the majority of the assemblage. Two marginally retouched flakes and one retouched piece of small angular debris were recovered. Both bidirectional and unidirectional retouch is evident. Bidirectional retouch was identified on one medial fragment indicating that it was probably broken during use. No use wear was identified on the other marginally retouched artifacts. Another expedient flake tool exhibited bidirectional use on a functionally complete edge and was probably discarded when it was no longer useful. No ground stone was recovered from the provenience.

Feature 15 has a good sample of animal bone, over half is cottontail rabbit (Table 11.26). As many as six cottontails may be represented but most parts consistently suggest only two or three. Virtually all parts are found. Jackrabbits also have a good representation of body parts—except for feet—but no more than one rabbit is



Figure 11.21. Study Unit 3, Feature 15, profile looking south and west.

Table 11.27. LA 265, SU 3, Feature 15, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	33.3	4	33.3	-	-	-	-	4	33.3	-	-	12	5
Flake	84	43.3	12	6.2	6	3.1	11	5.7	80	41.2	1	0.5	194	86
Flake, Bifacial Thin	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Core, Multiplatform	4	28.6	3	21.4	-	-	2	14	5	35.7	-	-	14	6
Angular Debris, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Flake, Marginal Retouch	-	-	-	-	-	-	-	-	2	100.0	-	-	2	<1
Total	93	41.3	19	8.4	6	2.7	13	5.8	93	41.3	1	0.4	225	100

indicated by the part distribution. The elk part is a portion of a rib shaft, with cuts and chops on the shaft. The presence of the turkey burial and toads and the amount of burning suggests diverse functions for this pit. The burning is mostly on the rabbits and small mammal (probably rabbit) and a few medium artiodactyls. Animal activity is indicated by one instance of carnivore gnawing, three punctures, and 13 bones look scatological. Condition is generally good. Potential processing includes spiral breaks on a small mammal long bone and a cottontail femur shaft, an impact fracture on a medium artiodactyl long bone, a peel on a rib, and the chops and cuts on the elk rib.

*Feature 19.* Feature 19 was a turkey burial

recovered from the east half of Feature 15 (Fig. 11.22). No prepared burial pit was observed; the remains appear to have been laid in the fill of Stratum 4. Fully articulated, the remains measured 60-by-50-by-13 cm. It had been arranged so that the body faced east (lying on its left side), the neck bent into an S-shape with the beak pointing north, the right leg pointing east and the left leg pointing west. No artifacts or grave goods were observed. All surrounding soil was collected as flotation sample, and a pollen sample was taken from its stomach area. Two types of cactus pollen, *Cylindropuntia* and Cactaceae, as well as *Sphaeralcea* (globemallow), and *Zea mays* were recovered in high amounts, considered too high to be attributed



Figure 11.22. Study Unit 3, turkey burial, Feature 19 in Feature 15, pit.

to the natural pollen rain. This suggests that flowers, or less likely fruits, and possibly corn pollen were interred with the remains. The *Zea mays* also may have been a part of its diet.

*Feature 36.* Feature 36 consisted of two adjacent, slightly overlapping pits on the sloping southwest wall of Feature 15 (Fig. 11.18). Both pits were north-south oriented, basin-shaped ovals with gently sloping walls and floors. They were designated A and B. They were roughly the same size, with A measuring 60-by-40-by-18 cm, while B was 55-by-44-by-22 cm. Pit A was located further to the west and originated at roughly the same elevation as Feature 15. Pit B was east of and slightly overlapping A, possibly postdating it. Pit B originated at a slightly lower elevation due to the slope of Feature 15's west wall, and its base was 7 cm deeper. Fill in both was a single stratum of 10YR 4/2 dark grayish brown sandy loam with charcoal and burned adobe chunks. Except for a lack of pumice, it more closely resembled Feature 7; Feature 44, Stratum 1; and Feature 149 than any of the strata in Feature 15 or the nearby Feature 153. Artifacts recovered included lithics, ceramics, a few bone fragments, and more than 40 cobbles (11 noted as large), and fire-cracked rock weighing more than 20 kg.

*Features 151 and 153.* Features 151 and 153 were adjacent to each other on the south and southwest sides of Feature 15, 0.5 m southeast of Feature 36 (Fig. 11.18). Both were large, deep, bowl-shaped pits with steep sides and concave bases. Feature 153 was larger, measuring 65-by-61-by-37 cm. Its north wall was a few centimeters from the edge of Feature 15. Feature 151 had no north wall as it was directly on top of the almost vertical south wall of Feature 15. It appeared in plan view as the southern two-thirds of a round pit which measured 58-by-41-by-37 cm. Although both were 37 cm deep, the base of Feature 153 was lower in elevation. The fill of Feature 153 was a 10YR 5/3 brown loam, similar to Feature 15, Strata 3 and 6. Lithics (n = 3), ceramics (n = 2), animal bone (not analyzed), and charcoal were recovered. Feature 151 was not recognized as a

discrete feature prior to excavation, rather it was observed during excavation of the upper strata of Feature 15. Once it became obvious, it was documented, but any associated artifacts had been included with the upper strata of Feature 15. Although its fill was not described nor a soil sample taken, it is likely that it was similar or identical to that of Feature 153.

*Feature 38.* Feature 38 was located on a large, fairly flat shelf between Features 14 and 15, about 35 cm north of Feature 15. This area was heavily bioturbated, but may have been utilized as a shelf or small activity area associated with the large pits. This feature was not well documented, but it appears to have been a small, irregular northeast-southwest-oriented oval pit that measured 41-by-33-by-10 cm. It was basin shaped with gently sloping sides. Its fill, a 10YR 4/2 loam, was similar to that of Feature 36 and Feature 37, Stratum 1. Although shallow, it contained lithics (n = 8), ceramics (not analyzed), animal bone (n = 11), three cobbles weighing 2 kg, and two pieces of fire-cracked rock weighing less than 1 kg. Animal bone included desert cottontail (n = 4) black-tailed jackrabbit (n = 3), medium artiodactyl (n = 3), and small mammal/medium bird (n = 1).

*Feature 34.* Feature 34, in the southeast quadrant of the pit cluster (Fig. 11.18), was much larger in plan view but more shallow than Features 14 and 15. Unlike the other large pits, Feature 34 contained two interior features, a pot rest and a wall niche, both in the northeastern portion of the feature. It was an irregular northeast-southwest-oriented oval that measured 3-by-2.6 m in diameter with a depth of 27 to 63 cm. Its eastern edge had been defined while the eastern edge of Feature 3 was being excavated. A hand-dug trench along the 499E grid units further defined the feature. The 484N/499E grid unit (it was in this unit that Feature 16 would have been located) was removed in bulk; 67 to 79 cm of fill was removed without regard to natural or arbitrary levels. The base of this excavation was 25 to 40 cm beneath the base of Feature 34. This yielded a profile on three walls that was used to guide the excavation of the remaining grid units.



After the 482–483N/499E grid units were dug by natural stratigraphic units, the two resultant profiles were drawn, C–C' along the 500E grid line and D–D' along the 499E grid line (Fig. 11.19). Five strata of fill were documented underneath Feature 3. Only one, Stratum 4, appeared to be continuous across most of the feature. Stratum 5 was only observed in the lowest part of the floor, the northwest quadrant, and Stratum 6 was only found in the pot rest. The remaining east and west portions of the feature were also excavated by natural stratigraphic units.

While Features 14 and 15 appeared to have been storage pits, Feature 34 more closely resembled some type of activity area. It was very shallow for a pit of this size. Although smaller, it had many similarities to Feature 56 in Study Unit 4 in the shape of its wall and sloping floor. The walls along its east half were almost vertical. The northwest and southwest walls were sloping and basin shaped, but much shorter than the east walls. The height of the west wall was unknown as the 497E trench had removed nearly a meter. The floor was generally smooth, but not flat. It was deepest in the northwest, sloping upward to the west and southeast, an elevation change of up to 35 cm. The presence of interior features was another similarity to Feature 56, as this pit had a large pot rest on the floor of the northeast quadrant, near the east wall, and a wall niche in the northeast wall, about 50 cm away. The 499E trench had removed the western portion of the pot rest, but it would have measured about 85 cm in diameter and 26 cm deep. It was basin shaped with gently sloping sides, much like Features 36, 38, and 168. The wall niche appears to have been 40 cm high by 40 cm wide and 36 cm deep.

Many of the cobbles and fire-cracked rock were not counted or weighed, but 51 pieces weighing 11.5 kg were recorded. These came from only a few grid units, so the total that would have been present probably would have been much higher. Artifacts recovered included lithics (n = 74), ceramics (n = 107), bone (n = 19), charcoal, and two metate fragments.

One hundred and seven ceramics were analyzed from Feature 34 (Table 11.24). The ceramic type distribution is similar to domestic refuse recovered from structure fill. Middle Rio Grande Plain predominates with a consistent but low frequency occurrence of Mogollon region types including Alma Plain, San Francisco Red, and Jornada Brown. Vessel forms included jar body sherds, with moderate proportion of neck sherds (15 percent) suggesting a few plain jars were represented. Bowl body and rim sherds reflect domestic nature of the deposit. Cooking, as indicated by sooting and abrasion, was 8 percent of the assemblage.

Seventy-four lithic artifacts were recovered from Feature 34 (Table 11.30). The majority of the assemblage consisted of chert (41 percent), nonvesicular igneous materials (37 percent), chert (14 percent), and Jemez obsidian (5 percent). The remaining material categories: quartzite, sandstone, and "other" local were represented by one lithic artifact each.

The assemblage contained a small number of whole flakes (n = 24)—of these 75 percent lack dorsal cortex indicating an emphasis on later stages of secondary core reduction. Nine multiplatform cores and one single-platform core were also recovered, further supporting an emphasis on later stages of secondary core reduction. Only a single bifacial thinning flake with a retouched platform indicates that bifacial manufacture of a nonvesicular igneous material tool was probably manufactured in the area.

Unutilized flakes (75 percent) and unutilized small angular debris (4 percent) make up the majority of the assemblage. Two flake tools were recovered. A marginally retouched chert flake indicates unidirectional wear typical of scraping on hard media like bone or wood. The functional edge is not complete so it is likely that it broke during use. The second tool was manufactured from nonvesicular igneous material and exhibited extensive battering along a complete functional edge. It is likely that this tool was discarded after it was no longer functional. A bifacial chopper, manufactured from nonvesicular igneous material, indicates additional functional diversity. A

fragment of fine-grained rhyolite indicates an indeterminate metate.

The 19 animal bones included Gunnison's prairie dog (n = 9), black-tailed jackrabbit (n = 4), and desert cottontail rabbit (n = 2). These species reflect field and local grassland hunting strategies. Eighteen bones are unburned, perhaps reflected butchering practices. Fifty percent of the bones are more than 75 percent complete suggesting butchering discard, rather than cooking refuse.

*Feature 16.* Feature 16 was a pit on the north edge of Feature 34 (Fig. 11.18). It was identified and labeled on the B-B' profile (Fig. 11.19). In plan view it appeared as a large east-west-oriented oval 90-by-47 cm. The profile shows it to be about 25 cm in depth, having a fairly flat base with moderately steep walls. It does not appear to be either a basin or bowl shape as the other secondary pits. Either no artifacts were recovered from the feature, or they were removed during the excavation of the 484N/499E grid unit containing the feature.

*Feature 35.* Feature 35 was the smallest and shallowest of the four main pits (Fig. 11.18). The 485N trench had removed its southern portion, but it was estimated to be a 175-by-135 cm northeast-southwest-oriented oval, with measured depths of 28–48 cm. At least a third of the feature had been removed by the trench. Below the upper Feature 3 fill, excavators encountered a thin Stratum 2, a 10YR 6/3 silty loam similar to that of Feature 99, near the base of the feature. The east wall was tall and almost vertical. The north walls were shorter and more basin shaped, gently sloping upward to Features 44, 99, and 149. There was no west wall: it simply intersected with Feature 14. The floor was generally smooth but not flat. It was deepest along the east wall, sloping upward to the west where it stopped abruptly at Feature 14. Like Feature 34, this pit appears to be more like an activity area of some type than a storage pit.

Two grid units were excavated to remove the remainder of the feature. Only 16 cobbles and fire-cracked rock weighing 9 kg were noted, but considering how much of the feature had been removed by the 485N trench, the total counts could have been much higher.

Artifacts recovered included lithics (n = 53), ceramics (n = 36), bone, and charcoal.

Thirty-six ceramics were analyzed from Feature 35 (Table 11.24). The ceramic type distribution is similar to domestic refuse recovered from structure fill. Middle Rio Grande Plain predominates with Tallahogan-like and San Francisco Red suggesting influences from the Mogollon and White Mountain areas to the southwest. Vessel forms are primarily jar body sherds, with 14 percent displaying sooting and abrasion from cooking.

Fifty-three lithic artifacts were recovered from Feature 35 (Table 11.28). The majority were manufactured from nonvesicular igneous materials (49 percent), chalcedony (36 percent), and chert (11 percent). Two additional lithic artifacts, one quartzite flake and one Jemez obsidian bifacial thinning flake, were also recovered. Although only 18 whole flakes occur in the assemblage, 72 percent lack dorsal cortex. The assemblage lacks evidence of primary reduction, but exhibits evidence of bifacial tool manufacture—two flakes exhibit retouched platforms, one made from Jemez obsidian and the other from chert. Unutilized flakes (81 percent) and unutilized small angular debris (13 percent) made up the majority of the assemblage.

Of the eleven animal bones recovered, seven were desert cottontails and two were black-tailed jackrabbits. Five of the eleven bones were burned or scorched suggesting cooking discard. The low frequency prevents further interpretation relative to site occupant activities or behaviors.

*Features 44, 99, and 149.* Features 44, 99, and 149 were secondary pits located on the northern edges of Feature 35 (Fig. 11.18). All were large and bowl-shaped, with steep walls and concave bases. In all three, the walls furthest away from Feature 35 were taller than the nearer walls. Feature 44, to the northwest, was a northwest-southeast-oriented oval, measuring 58-by-45-by-25 cm. It had two strata of fill. Stratum 1 was a 10YR 4/2 silty loam, similar to Features 7 and 149, and Stratum 2 was a slightly less dark 10YR 4/3 silty loam. Feature 99, to the north, was the smallest at 54-by-42-by-11 cm, and was also a northwest-southeast-orient-

Table 11.28. LA 265, SU 3, Feature 35, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	4	57.1	1	14.3	-	-	-	-	2	28.6	7
Flake	15	34.9	5	11.6	1	2.3	-	-	22	51.2	43	81.0
Flake, Bifacial Thin	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Core, Multiplatform	-	-	-	-	-	-	-	-	2	100.0	2	3.0
Total	19	35.8	6	11.3	1	1.9	1	1.9	26	49.1	53	100.0

Table 11.29. LA 265, SU 3, Feature 7, Lithic Artifact by Material Type

	Chalcedony		Chert		Quartzite		Nonvesicular Igneous		Other Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	4	44.4	1	11.1	2	22.2	2	22.2	-	-	9
Flake	31	47.7	6	9.2	3	4.6	25	38.5	-	-	65	77.0
Core, Multiplatform	3	60.0	2	40.0	-	-	-	-	-	-	5	5.0
Hammerstone	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Flake, Utilized	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Metate, Unknown	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Mortar	-	-	-	-	-	-	-	-	2	100.0	2	2.0
Total	40	47.6	9	10.7	5	6.0	28	33.3	2	2.4	84	100.0

ed oval. Lying between the other two, it was smaller and shallower. It also originated at a much lower relative elevation and had a much lighter fill, a 10YR 6/3 silty loam similar to Feature 35, Stratum 2. It appears to have been the first of these three pits to have been filled with debris and trash. Feature 149, to the northeast, was larger and deeper than the others. A north-south-oriented oval, it measured 72-by-63-by-37 cm. It contained only one stratum of fill, a 10YR 4/2 silty loam, very similar to Feature 44, Stratum 1.

Very few artifacts were recovered from these features. Feature 44 contained lithics, ceramics, a piece of turquoise, and a fine-grained rhyolite multiplatform core. Charcoal, one cobble, and two pieces of fire-cracked rock were noted. Feature 99 yielded only two ceramics, and Feature 149 had no artifacts, although 22 cobbles weighing 2.5 kg were noted.

*Feature 168.* Feature 168 was a small northeast-southwest-oriented oval pit between Features 35 and 14 (Fig. 11.18). Shallow and basin-shaped, it measured 60-by-45-by-10 cm

with gently sloping walls and floor. The entirety of its fill was collected as two bags of flotation sample, and no artifacts were recorded. The fill was a 10YR 5/3 brown sandy loam with charcoal and adobe chunks, similar to that of Feature 34, Stratum 5, and Feature 14, south half, Stratum 3. The flotation sample contained a single ceramic fragment but no other artifacts.

### OTHER FEATURES IN STUDY UNIT 3

#### *Feature 7*

Feature 7 was a very large cobble and fire-cracked rock-filled thermal pit located less than 20 cm north-northeast of Feature 35 (Fig. 11.18). A northeast-southwest-oriented oval basin, it measured 207-by-141 cm. The base sloped downward to the southwest, with depths of 30 cm in the northeast, 55 cm in the southwest, and 60 cm in the center. The walls and floor were generally smooth and regular. Its fill consisted of a single stratum of 10YR 4/2 ashy silty loam with pumice, charcoal, and

adobe fragments. It was similar to, but lighter in color than Feature 3, and possibly postdates it. Its mottled nature, with areas of denser charcoal and/or more intense staining, suggests that it was the product of repeated episodic dumping of very similar materials. Large numbers of artifacts were recovered, including lithics (n = 84), ceramics (n = 225), bone (n = 22), and charcoal. Three pieces of ground stone, two tuff mortar fragments (half of the total mortar assemblage from the entire site), and one rhyolite metate fragment were also recovered. Very large amounts of cobbles and fire-cracked rock (more than 440 pieces weighing over 125 kg) were observed throughout the fill. Although many were found on the floor of the feature, no patterning could be detected, although small patches of oxidation were noted. Some areas of fill contained very concentrated charcoal deposits and staining that might suggest possible spotty, small-scale reuse after the feature had begun to be filled.

Two hundred and twenty-seven ceramics were analyzed from Feature 7 (Table 12.24). The ceramic type distribution is similar to domestic refuse recovered from structure fill. Middle Rio Grande Plain predominates with low frequency occurrence of Mogollon region types including Jornada Brown and San Francisco Red. Vessel forms included jar body sherds with low frequency of bowl body and rim sherds. Low vessel diversity is common in these assemblages, but Feature 7 exhibits lower diversity than is typical. Cooking, as indicated by sooting and abrasion, was 8 percent of the assemblage, which is also lower than the typical domestic assemblage.

Eighty-four lithic artifacts were recovered from Feature 7 (Table 11.29). The most abundant lithic material categories represented are chalcedony (48 percent), nonvesicular igneous materials (33 percent), and chert (3 percent). Low frequencies of quartzite (n = 5) and "other" igneous material (n = 2) were also recovered. The assemblage indicates an emphasis on later stages of secondary core reduction—81 percent of the whole flakes lack dorsal cortex. Five multiplatform cores were

manufactured from chalcedony (n = 3) and chert (n = 2). A hammerstone was also recovered. The assemblage lacks evidence of formal tool manufacture. Unutilized flakes (77 percent) and unutilized small angular debris (10 percent) make up the majority of the lithic assemblage. A single expedient flake tool, manufactured from chalcedony, exhibited unidirectional wear patterns typical of use on hard media like bone or wood. The utilized edge was not complete and probably represents a tool broken during use. Two fragments represent a mortar manufactured from tuff and a third fragment represents an indeterminate metate, made from a coarse-grained rhyolite.

Twenty-two animal bones were analyzed from Feature 7. Unlike other assemblages, this small sample is almost equally divided between small and medium-large mammals, including desert cottontail and mule deer. The animal bones are highly fragmented, but not burned suggesting processing or cooking without direct contact with a heat source.

#### *Feature 9*

Feature 9, located 6 m southwest of Feature 15 (Fig. 11.17), was a very large unburned pit surrounding a smaller fire-cracked rock-filled thermal pit. The larger pit was a basin-shaped east-west-oriented oval that measured 265-by-205-by-15 to 39 cm deep. The smaller pit was located near the northwest wall and measured 125-by-110 cm, a northwest-southeast-oriented oval. Its base extended 31 cm deeper than the floor of the larger, reaching a maximum depth of 70 cm. A small depression (50-by-33-by-6 cm) was located along the east edge of the larger pit and appears to have been utilized as a large pot or basket rest. Cobbles and fire-cracked rock were found throughout the fill of both pits, but many were clustered in the bottom 20 cm of the smaller pit. Fire-cracked rock totaled 94 weighing 25.5 kg and cobbles totaled 53 weighing 22.5 kg. In addition, lithics, ceramics, bone, and charcoal were recovered. Fill was a single stratum of 10YR 4/3 brown sandy loam with pumice, charcoal, and adobe

chunks. Inclusions of oxidized soil were noted, as well as streaks of a yellow-orange fill in bioturbated areas. With depth, the pumice decreased and the charcoal increased. No oxidation was noted although the fill contained much charcoal, inclusions of burned soil, and some of the bone fragments appeared to have been burned. The north half of the feature was excavated all at once with all fill removed and screened. The south half was excavated in arbitrary 10-cm levels and most of the fill (98 bags) was collected for a flotation sample and only a few artifacts were bagged separately.

Partial recovery of artifacts from the north half of Feature 9 yielded 119 sherds, 124 lithic artifacts, and 23 pieces of animal bone. These artifacts are included in the summary data presented for hearths and roasting pits.

#### *Feature 10*

Feature 10 was located in the southwestern portion of Study Unit 3. Excavation revealed it to be the ventilator shaft and tunnel entrance to a pit structure lying outside the project right-of-way (Fig. 11.17). Shovel scraping west of Feature 10 exposed the eastern edge of a pithouse outline measuring at least 7 m in diameter. Because the structure was outside of the construction right-of-way it was not excavated or tested. Feature 10 measured 155-by-110 cm, an east-west oriented oval, and reached a depth of 39 cm. At this depth the base of the east half remained flat, forming a step, while the west half constricted to a 90-cm-diameter shaft that continued to a depth of 140 cm (Fig. 11.23). Its floor was flat, and the walls smooth and mostly vertical. The fill consisted of two strata, one above the step and another below. Stratum 1 was a 10YR 4/3 ashy sandy loam with charcoal and burned adobe chunks. Stratum 2 was a slightly lighter 10YR 5/3 silty loam with charcoal, and chunks of adobe and burned soil. Artifacts recovered included 169 lithics, 97 ceramics, 4 animal bones, shell, and more than 50 cobbles and fire-cracked rock. The horizontal tunnel to the unexcavated pit structure was identified by stratified fill deposits observed in an opening in the west

wall. This area measured 104 cm across and 85 cm high with a flat base, vertical walls, and an arched top (Fig. 11.23). This was larger than the ventilator tunnels to the other three structures, and easily large enough to be utilized as an entrance. For safety reasons, the tunnel was not excavated.

The step was created when the shaft reduced in diameter (the upper east half of Feature 10) measured 75-by-45 to 90 cm at a depth of 39 cm. It would have allowed easier access to the tunnel entrance of the unexcavated pit structure. Feature 12 was found on this step. Feature 12 was a small, shallow, fire-cracked rock-filled pit that measured 54-by-31-by-10 cm. It contained lithics, ceramics, charcoal, and 23 burned cobbles and fire-cracked rock. It was not formally constructed, but appeared to be a single expedient usage which had been placed on the step. Its base was not oxidized, but described as "baked." The two strata of fill indicate that Feature 10 had been filled with material comprising Stratum 2 to the level of the step before Feature 12 was constructed. Stratum 1 had then been deposited after Feature 12 had been abandoned. The context of use of Feature 12 is unclear but it may simply have been a place for a sheltered, slightly below ground level, expedient hearth.

Artifacts recovered from the Feature 10 ventilator shaft reflect post-occupation refuse filling of the shaft and tunnel. Ceramic type and form distributions are similar to typical Early Developmental assemblages with a high frequency of Middle Rio Grande Plain jar sherds (Table 11.25). Cooking and storage are indicated with 12 percent of the sherds exhibiting wear associated with cooking.

One hundred and seventy-two lithic artifacts were recovered from the ventilator shaft in Study Unit 3 (Table 11.30). The majority of the assemblage consisted of chalcedony (49 percent), nonvesicular igneous materials (20 percent), and Jemez obsidian (17 percent). Low frequencies of chert ( $n = 16$ ) and quartzite ( $n = 7$ ) were also identified. The assemblage clearly exhibits an emphasis on later stages of secondary core reduction and bifacial tool manufacture. Eighty-two percent of the whole flakes

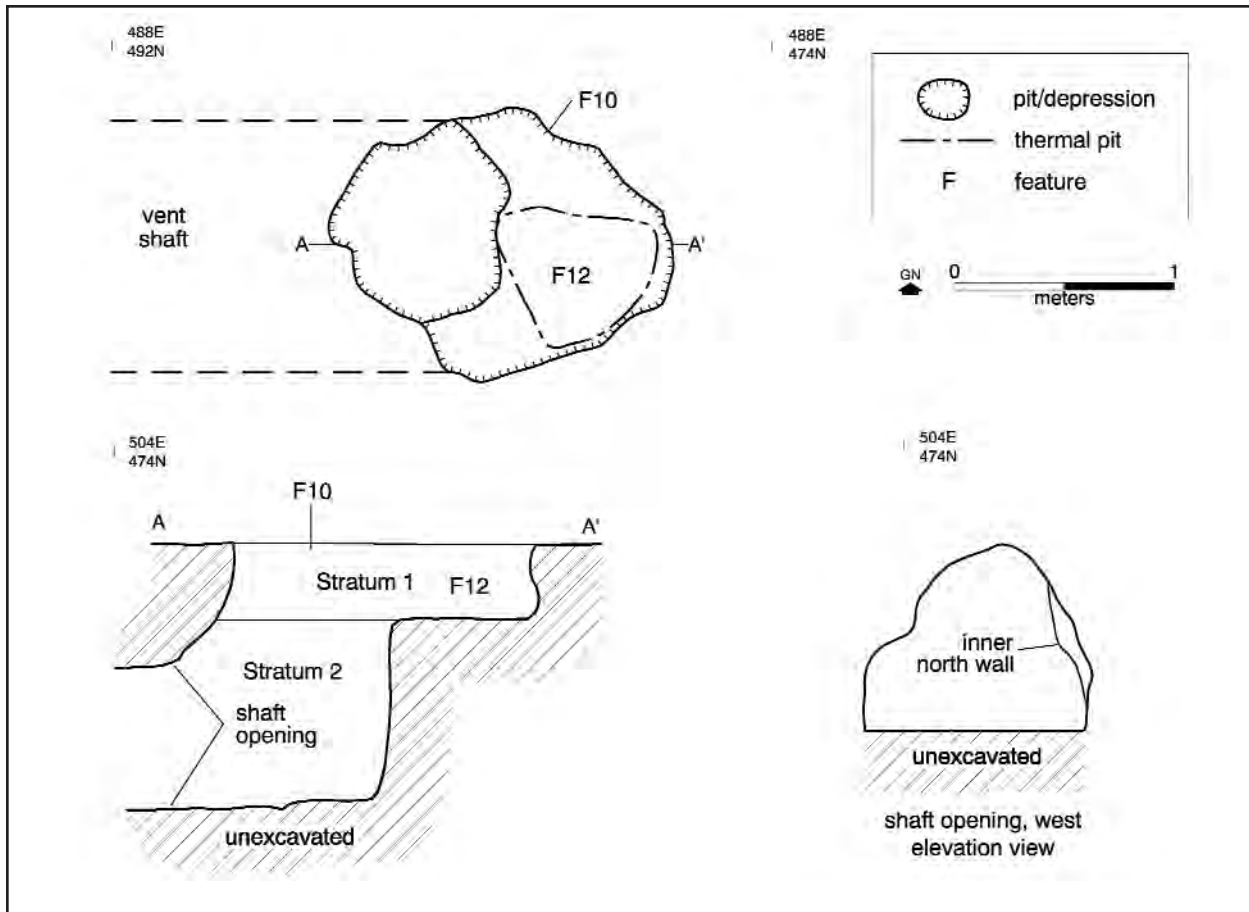


Figure 11.23. Study Unit 3, Features 10 and 12, plan and profile.

lack dorsal cortex. Platforms are single-faceted (35 percent), multifaceted (13 percent), or collapsed (31 percent). Nine bifacial thinning flakes indicate that bifacial tool manufacture of Jemez obsidian ( $n = 7$ ) and chalcedony ( $n = 2$ ) tools occurred. Two multiplatform cores and a pecking stone were also recovered. Unutilized flakes (83 percent) and unutilized small angular debris (8 percent) make up the majority of the lithic assemblage. Three tools were recovered from the provenience—a marginally retouched chert flake exhibited unidirectional retouch but lacked evidence of utilization. The single functional edge on this tool was incomplete indicating that it is likely that the tool broke during manufacture. Two Jemez obsidian bifaces were recovered from the provenience—one was complete and the other was a distal fragment. The whole tool exhibits a complete functional edge that lacks evidence of use.

#### Feature 11

Feature 11 was another very large burned pit, similar in size to Feature 9. Located about 8 m south-southwest of Feature 15, it was a large northwest-southeast-oriented oval that measured 230-by-175-by-34 cm (Fig. 11.17). The sides were vertical and the base was generally flat, but gently sloping in some areas. The feature was bisected and the northeast half was removed in bulk, revealing a profile with two strata. The oxidation noted was not on the floor of the feature, but rather on the top of Stratum 2, indicating reuse of the feature. Stratum 1 was a 10YR 4/2 ashy sandy loam with charcoal and adobe chunks and appears to be primary refuse from the latest utilization of the pit. Below the oxidation along its top, Stratum 2 was much lighter in color and texture, a 10YR 5/3 loam that contained pumice and charcoal

Table 11.30. LA 265, SU 3, Ventilator Shaft to Unexcavated Pithouse, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	10	71.4	3	21.4	-	-	-	-	1	7.1	14
Flake	73	51.0	12	8.4	7	4.9	20	14.0	31	21.7	143	83
Flake, Bifacial Thin	2	22.2	-	-	-	-	7	77.8	-	-	9	5
Core, Multiplatform	-	-	-	-	-	-	-	-	2	100.0	2	1
Pecking Stone	-	-	-	-	-	-	-	-	1	100.0	1	<1
Flake, Marginal Retouch	-	-	1	100.0	-	-	-	-	-	-	1	<1
Biface	-	-	-	-	-	-	2	100.0	-	-	2	1
Total	85	49.4	16	9.3	7	4.1	29	16.9	35	20.3	172	100

flecking as well as adobe chunks. It was mottled with areas of burned soil that may have been moved downward by bioturbation, which was prevalent throughout the feature. It was similar to Stratum 2 of Feature 10 just to the northwest. It is unclear whether this stratum accumulated naturally, or was intentionally placed prior to reuse. The excavators noted that most of the artifacts recovered seemed to come from the contact of the two strata, deposited at the time of reuse. The base of the feature was not oxidized.

Artifacts recovered included 16 lithics, 67 ceramics, 19 animal bones, two mano fragments, an indeterminate ground stone fragment, and a small piece of turquoise. As was the case with Feature 9, the artifact count may be artificially low. Stratum 1 of the southwest half was collected as 107 bags of flotation samples. These bags were dry-screened, but the artifacts were not analyzed. Analyzed artifacts are included in the data summaries of the hearths and roasting pits.

### Feature 13

Feature 13 was a large cobble-filled thermal pit located 3 m south-southwest of Feature 15. Like Features 3 and 237, it was visible on the modern ground surface. Its center was covered with only a few centimeters of eolian sand, but many of the cobbles were visible. The feature was located at the south head of a runoff diversion trench associated with present highway maintenance activity. In Study Unit 3 this trench was very shallow,

more of a gentle swale, but it increased in depth as it proceeded to the north. The trench had pulled a few cobbles and some of the upper fill from Feature 13 and smeared them up to 40 cm to the north. Excavation revealed the feature to be a north-south-oriented oval, 96-by-76-by-10 cm. Twenty-three medium to large cobbles and 20 small pieces of fire-cracked rock were observed. No other artifacts were recorded, although the entire south half fill was collected as nine bags of flotation sample and not all of it was processed. The east-west profile indicates two use episodes. The lower stratum was a 1–3 cm lens of 10YR 4/2 ashy loam with charcoal and small adobe chunks. It was bounded on each side by a 4–5 cm tall collar of sterile subsoil. Neither the collar nor the floor of the feature was oxidized. This lower stratum measured only 28 cm between the collars. None of the cobbles appeared on the floor of the feature. The upper stratum was much darker, 4–8 cm of 10YR 2/1 black ashy loam with pumice, charcoal, and small adobe chunks. This measured 62 cm across, stretching across the top of the collar. Most of the cobbles were observed outside the boundaries of the collar. The first use episode appears to be a small collared hearth, less than 30–40 cm in diameter, which did not burn hot enough to cause oxidation. None of the cobbles appear to be associated with this usage. The second episode appears to be a much larger oval hearth, measuring 96-by-76 cm, without a collar, which was used for heating cobbles. Its position, roughly in the midpoint of the triangle formed by Features 3, 9, and 11, suggests that it may be

associated with any or all of them.

#### *Feature 178*

Feature 178 was a very large, deep unburned pit less than 1 m southeast of Feature 34 (Fig. 11.17). A northeast-southwest-oriented irregular oval in plan view, it measured 149-by- 81-by-53 cm. Its walls were almost vertical and the floor was irregular but generally flat, although the northeastern one-third was 8-10 cm shallower than the rest of the pit. The fill consisted of three strata of grayish brown or brown loams (10YR 4/2, 5/2, and 5/3). All contained adobe chunks and charcoal. Twenty-nine lithics, 19 ceramics, and bone (none analyzed) were recovered, and only one cobble and no fire-cracked rock were noted. Ceramic and lithic artifact data have been combined with and presented in the "Other Features" contributions from Study Unit 3. The feature appears to be a large, deep storage pit associated with, but at a slight distance from, the pits of Feature 3.

#### *Feature 236*

Feature 236 was a large unburned pit less than 1 m east of Feature 7 (Fig. 11.17). Measuring 122-by-64 cm, it was a north-south-oriented oval. The walls were mostly vertical, and the floor sloped downward, from south to north, with depths ranging from 20 to 50 cm. A stain appeared on the floor of the north end. It measured 26-by-24 cm and extended downward and slightly to the west for an additional 37 cm, making the total maximum depth for this portion of the feature 87 cm. It was initially thought to be a rodent burrow, but its fill (Stratum 4, a 10YR 4/2 sandy loam) contained charcoal and burned adobe fragments. While bioturbation was common across this study unit, in no instance were adobe fragments observed in the disturbances, although charcoal flecking was common. When viewed in conjunction with Features 261, 262, and 264, this lower pit appears to be a possible posthole. The main portion of the pit contained three strata, ranging from brown to very dark gray-

ish brown loam. They also had varying amounts of charcoal. Stratum 1, a 10YR 5/3 sandy loam, contained charcoal flecking, Stratum 2, a 10YR 3/2 sandy loam, had much more charcoal and light yellowish brown mottling, and Stratum 3, another 10YR 5/3 sandy loam, had no charcoal at all. No fire-cracked rock or cobbles were noted in any of the strata and no oxidation was noted on the walls or floor of the feature. Only 58 lithics and 22 ceramics were analyzed. Any recovered animal bone was not analyzed. Ceramic and lithic artifact data have been combined with and presented in the "Other Features" contributions from Study Unit 3.

#### *Features 261, 262, and 264*

Features 261, 262, and 264 were small unburned pits that may be postholes. Located north and northeast of Feature 236, they formed a northwest-southeast oriented rectangle that measured about 2-by-4 m (Fig. 11.17). All were similar in size and fill, although Feature 236 was much deeper with a darker fill. Six additional small stains were investigated in this area, but they were too disturbed to be positively identifiable. This area may represent the remains of a windbreak or ramada sheltering an activity area northeast of Feature 7. Sixteen ceramics were recovered from these features. Ceramic artifact data have been combined with and presented in the "Other Features" contributions from Study Unit 3.

#### *Feature 237*

Feature 237 was a large basin-shaped unburned pit 2 m west-northwest of Feature 7 (Fig. 11 SU3-1). It was visible on the modern ground surface as a small pile of cobbles with visible charcoal. After the cobbles were removed, it appeared as a northeast-southwest-oriented oval with heavy bioturbation on its southeast side. This turned its plan view into a wedge shape measuring 82-by-55 cm. Its maximum depth was only 14 cm. Fill was a single stratum of 10YR 4/2 loam with pumice,



very little charcoal, and a few burned adobe chunks. A few lithics and ceramics were recovered, but the fill contained no cobbles or fire-cracked rock. The three ceramics that were analyzed were Middle Rio Grande Plain jar body sherds. The base and walls were relatively smooth, although bioturbation continued from the south edge through the floor. No oxidation was noted, and its function is unknown. The cobble pile above the pit contained more charcoal than the pit itself. This cobble pile may indicate a secondary usage, or may have been the more recent creation of someone who visited the site sometime before excavation began, possibly during construction of the water diversion ditch.

### *South of Feature 3*

The area south of Feature 3 contained four shallow unburned pits (Fig. 11. SU3-1). Features 240, 241, and 243 were of similar size (80–90 cm in diameter by 10–18 cm deep) while Feature 259 was much smaller at 35 cm in diameter by 12 cm deep. All were basin shaped with irregular floors on which no oxidation was noted. Bioturbation was prevalent in this area and all four features had been negatively impacted. Fill was similar in each, 10YR 4/2 or 5/3 loams with charcoal and adobe chunks. Feature 259 was sterile, but the other three contained lithics and ceramics in low frequencies. Feature 240 had two cobbles, and one bone fragment was found in Feature 241. Although Feature 259 was shallow, it more closely resembled a posthole than it did the other three features, although no other postholes were found in this portion of the study unit. The function of the other three is unknown, although their proximity to Feature 3 suggests a possible association.

### *Lithic Artifacts from Small Pits, Hearths, Roasting Pits, and All Other SU 3 Features*

Twenty-two lithic artifacts were recovered from the small pits surrounding Feature 15 in Study Unit 3 (Table 11.31). Most were made of

nonvesicular igneous material ( $n = 12$ ) and chalcedony ( $n = 5$ ). Four chert artifacts and one artifact made of Jemez obsidian were also recovered. All whole flakes indicate a relatively equal emphasis of early ( $n = 3$ ) and later stages of secondary core reduction ( $n = 4$ ). No evidence of primary core reduction or tertiary tool manufacture was recovered. Unutilized flakes made up the majority of the assemblage ( $n = 20$ ). A single marginally retouched flake manufactured from nonvesicular igneous material exhibited unidirectional retouch, yet lacked evidence of use. The functional edge was complete, probably indicating that the tool was used in a way that prevents identification of use-wear at 30x to 60x magnification.

The lithic artifacts were recovered from hearths and roasting pits in Study Unit 3 numbered 144 (Table 11.32). The majority of the assemblage consisted of chalcedony (38 percent), nonvesicular igneous materials (38 percent), quartzite (10 percent), and chert (8 percent). Low frequencies of Jemez obsidian ( $n = 8$ ) and vesicular igneous material ( $n = 2$ ) were also recorded. The assemblage indicates an emphasis on later stages of secondary core reduction—83 percent of the whole flakes lack dorsal cortex. Single-faceted platforms make up 72 percent of the flakes with platforms. Three multiplatform cores, a hammerstone, and a unidirectionally retouched chopper were also recovered. There is no evidence of bifacial formal tool manufacture. Unutilized flakes (84 percent) and unutilized small angular debris (9 percent) represent the majority of the assemblage. A single utilized flake tool manufactured from Jemez obsidian exhibits unidirectional scraping wear. The wear patterns include rounding with striations perpendicular to the edge. The tool's functional edge is complete and measures 90 degrees. This type of tool and associated wear indicates prolonged use. It is likely that the tool was no longer functional for its prescribed task and was discarded.

Three ground stone fragments, each made of a different raw material, represent three different grinding implements. These artifacts are a vesicular basalt mano, a vesicular rhyolite

Table 11.31. LA 265, SU 3, Small Pits on the Edge of Feature 15, Lithic Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
	Angular Debris	-	-	-	-	-	-	1	100.0	1
Flake	5	25.0	4	20.0	1	5.0	10	50.0	20	90.0
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	1	4.0
<b>Total</b>	<b>5</b>	<b>22.7</b>	<b>4</b>	<b>18.2</b>	<b>1</b>	<b>4.5</b>	<b>12</b>	<b>54.5</b>	<b>22</b>	<b>100.0</b>

Table 11.32. LA 265, SU 3, Hearths and Roasting Pits, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	8	61.5	1	7.7	2	15.4	-	-	2	15.4	-	-	13
Flake	44	36.4	10	8.3	11	9.1	7	5.8	49	40.5	-	-	121	84
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	1	33.3	-	-	-	-	-	-	2	66.7	-	-	3	2
Hammerstone	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Chopper, Unifacial	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Mano, Unknown	-	-	-	-	-	-	-	-	-	-	2	100.0	2	1
<b>Total</b>	<b>55</b>	<b>38.2</b>	<b>11</b>	<b>7.6</b>	<b>14</b>	<b>9.7</b>	<b>8</b>	<b>5.6</b>	<b>54</b>	<b>37.5</b>	<b>2</b>	<b>1.4</b>	<b>144</b>	<b>100</b>

Table 11.33. LA 265, SU 3, All Other Features, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	23	63.9	3	8.3	-	-	2	5.6	8	22.2	-	-	36
Flake	120	44.8	38	14.2	4	1.5	10	3.7	94	35.1	2	0.7	268	82
Flake, Bifacial Thin	-	-	-	-	-	-	3	100	-	-	-	-	3	<1
Flake, Sharpening	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Tested Rock	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	7	70	-	-	-	-	-	-	3	30	-	-	10	3
Flake, Marginal Retouch	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Projectile Point	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Biface	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
<b>Total</b>	<b>151</b>	<b>46.7</b>	<b>41</b>	<b>12.7</b>	<b>4</b>	<b>1.2</b>	<b>19</b>	<b>5.9</b>	<b>105</b>	<b>32.5</b>	<b>3</b>	<b>0.9</b>	<b>323</b>	<b>100</b>

mano, and an indeterminate fine-grained rhyolite fragment.

Three hundred and twenty-three lithic artifacts were recovered from all other features in Study Unit 3 (Table 11.33). The majority of lithics were manufactured from chalcedony (47 percent), nonvesicular igneous materials (33 percent), and chert (13 percent). Low frequencies of Jemez obsidian (n = 19), quartzite (1 per-

cent), and "other" local material (>1 percent) were also recovered. Although all stages of reduction and tool manufacture are indicated by the collective assemblage, different reduction and tool manufacturing trajectories are indicated for different material groups. Chalcedony is the material type that exhibits primary reduction and both early and later stages of secondary core reduction. Seven chal-

cedony multiplatform cores were also recovered. The obsidian assemblage represents later stages of secondary core reduction and both bifacial tool manufacture as well as resharpening. The chert and nonvesicular igneous materials both exhibit an emphasis on later stages of secondary core reduction and bifacial tool manufacture. Three nonvesicular igneous cores were also recovered. Unutilized flakes (82 percent) and unutilized small angular debris (11 percent) constitute the majority of the lithic assemblage. Three Jemez obsidian tools were identified. A distal and a proximal portion of two projectile points and a marginally retouched flake fragment were recorded. The marginally retouched artifact lacked evidence of utilization and did not exhibit a complete functional edge. It is likely that this tool was broken during manufacture. A fragment of an indeterminate metate was manufactured from a local metamorphic material.

#### SUMMARY

Study Unit 3 was a 416-sq-m area that had a concentration of seventeen pits of varying size and depth and the ventilator shaft for a pit structure (Feature 10) located just outside the western project limit. Fifteen overlapping pit features of varying size and depth were concentrated in the Feature 3 area. Many of these features contained quantities of fire-cracked rock and were filled with structure, food processing, and consumption debris. Two large pits southwest of the Feature 2 pit cluster were large, shallow pits similar to Feature 35 in the Feature 3 area and Feature 56, a workspace defined in Study Unit 14. Thirteen other pit features ringed the Feature 3 concentration.

Study Unit 3 spatial organization is a striking contrast to Study Unit 2. Where Study Unit 2 features are well-spaced, Study Unit 3 features are, for the most part, densely clustered with all features within the Feature 3 cluster separated by no more than 50 cm from adjacent features. Within the tight Feature 3 cluster, 12 pit features are small to large in diameter, and five are very large with a maximum horizontal

dimension greater than 1.75 m. One interpretation is that the very large pits were for storage and the small to large pits were temporary housing. The small pits housed ceramic pots or baskets used to transfer foodstuffs from storage to processing areas. Another possibility is that the three very large pits with small-to-large pits functioned as integrated storage-processing facilities, each represented a use episode. Puzzling is the tight clustering of a similar array of features, when space does not appear to be tightly constrained within the site. Possibly, rock or other materials were stockpiled in this location in support of processing activities. The lack of burning within features indicates that they were not concentrated to reduce fire danger or the spread of ash and charcoal generated from processing activities. The tight clustering of very large pits suggests that they were used one at a time. Keeping more than one open would have presented logistical obstacles to access and maintenance.

The two very large, but shallower pits resemble outdoor work spaces with a maximum dimension of 2.30 m or more. Their proximity to the Feature 3 cluster suggests functional/temporal association. However, there was not concrete evidence that they were used concurrently. Fill within these features (Feature 9 and 11) is similar to the Feature 3 cluster fill and the character and content of the fill does not inform on the features' function. The lack of superstructure evidence may indicate an ephemeral or temporary covering that provided shade, but not protection from wind, rain, or snow. Each small to large pit cluster and workspace may represent a household facility suite. The need to replace the small-to-large/very large pit structure may reflect maintenance issues as pit walls become destabilized and difficult to maintain mixing sand with foodstuffs.

Study Unit 3's features reflect a significant investment in outdoor processing, work, and storage features. Their abundance, size, and organization suggest substantial warm to moderate climate occupation and activity such as might be expected at a year-round residence. The size of the features

reflects storage capacity at and beyond household level, as if agricultural and wild food gathering capacity was expected to be large and successful. While large storage features combined with large productive or processing facilities suggest overwintering and strategic planning for future needs, there is also a reliance on wild foods, suggesting that site residents were adept at implementing a wide range of technologies to support a successful lifestyle and occupation.

Further, these feature clusters appear to have been primarily if not exclusively utilitarian. The use of large pit features are burial pits in Study Unit 2 and the interment of burials in structures suggests that certain features or feature clusters were preferred for post-mortem activities, while other feature suites were strictly worldly or economic.

#### STUDY UNIT 4/STRUCTURE 4

Study Unit 4 was assigned to Structure 4, an Early Developmental pit structure located south of Study Units 1 and 2 in Area 1 (Fig. 11.2). The structure contains a central fire hearth with an associated ash pit and deflector, a four-post roof support system, a total of six highly oxidized "warming pits," and a complex ventilator shaft and tunnel system exhibiting at least one remodeling event. The structure was discovered when a backhoe trench was excavated at a shallow depth through the approximate center of the structure, exposing the upper portion of the structure fill. A second, perpendicular trench was excavated to define the limits of the structure, and a single 1-by-1-m test pit was excavated to floor. The structure was unburned and there was stratigraphic evidence that the roof was intentionally dismantled shortly after the feature was abandoned. In addition to the primary hearth complex and ancillary thermal features, the floor of the structure contained numerous small postholes, pot rests, and storage pits, several of which had been sealed, indicating at least one floor remodeling episode had taken place.

Structure 4 measured 5.46 m north-south by 4.4 m east-west, forming an elongated D-shape—a long oval extending north from a

fairly straight south wall, with the ventilator tunnel and shaft system extending east from the east side of the structure (Figs. 11.24, 11.25). The structure reached a maximum depth of 1.44 m from the present ground surface and encompassed a floor area of 20.58 sq m. It was the only pit structure on the site with evidence of significant remodeling.

None of the radiocarbon samples collected from the structure fill or floor features was identified as annual species and were thus not submitted for dating. An archaeomagnetic sample (Sample 1140), which was taken from the adobe collar of the hearth (Feature 72), yielded a preliminary date range of AD 780–825. Analyzed ceramics from the structure roof fall and floor date to the Early Developmental period.

#### *Excavation Procedures*

A north-south backhoe trench was excavated along the 494E grid line to define the north and south edges of Study Unit 1. It was extended south, removing the shallow (approximately 40 cm) topsoil and exposing the sterile Bk stratum. Carbon-stained sand appeared in the floor of the trench, approximately 5 m south of Study Unit 1 in units 442–447N/494E. From the edges of the stain, it appeared that the backhoe had exposed the top of the fill of the eastern third of a large feature or structure. Another backhoe trench was excavated east-west along the 444N grid line, bisecting the center of the exposed stain. This trench exposed the stain in five grid units, 490–494E. An exploratory 1-by-1-m grid unit was hand excavated at 444N/492E near the postulated center of the 5-m-diameter feature. It was dug in three natural stratigraphic units, and all fill was screened. This unit reached a depth of 1.41–1.44 m below the modern ground surface, ending on a smooth plastered floor. A portion of a hearth with an oxidized and carbon-stained adobe collar was found in the southeast corner of the unit. The 444N trench was widened to 1 m and hand excavated to a stratum of roof fall 12–39 cm above floor. The upper fill in this hand-excavated trench was



Figure 11.24. Study Unit 4, Structure 4, after excavation, view to the east.

discarded without screening. The roof fall stratum was then excavated to floor as one level in each of the remaining four units. This fill was screened. Photographs were taken and a profile drawn of the resulting north-facing profile. Pollen and flotation samples were taken for the entire stratigraphic column. Four control 1-by-1-m units, one in each quadrant, were then excavated at 443N/491E and 493E and 445N/492E and 494E. These were dug in 20-cm arbitrary levels, stopping at stratigraphic changes, and all fill was screened. The remaining fill was then removed by backhoe to 10–20 cm above the floor and within 30–50 cm from the walls. As the fill from the wall contact was removed by hand, Feature 22, a burial in the southeast quadrant, was encountered and excavated. This was the only feature encountered in the structure fill.

The structure was then divided into quadrants, and the remaining fill was removed and screened, exposing the floor. The floor features,

most filled with carbon-stained sands, stood out in contrast to the smoothed grayish floor. These features were assigned feature numbers and mapped with a plane table and alidade. Three of these were subsequently determined to be non-cultural.

#### *Stratigraphy*

Eight strata were observed in the structure profile (Fig. 11.26), but only three of these were continuous across the structure. Stratum 1 consisted of a homogeneous matrix of carbon-stained, coarse sandy loam with pumice fragments, charcoal flecks and chunks, and a few artifacts. This 75–100-cm-thick stratum most probably reflects the final infilling of the structure depression after this portion of the site was abandoned. Stratum 4 consisted of a similar sandy loam with charcoal and adobe chunks and varied from 15 to 44 cm thick. Stratum 8, a 15–60-cm-thick stratum just above the floor, consisted of charcoal-laden sandy

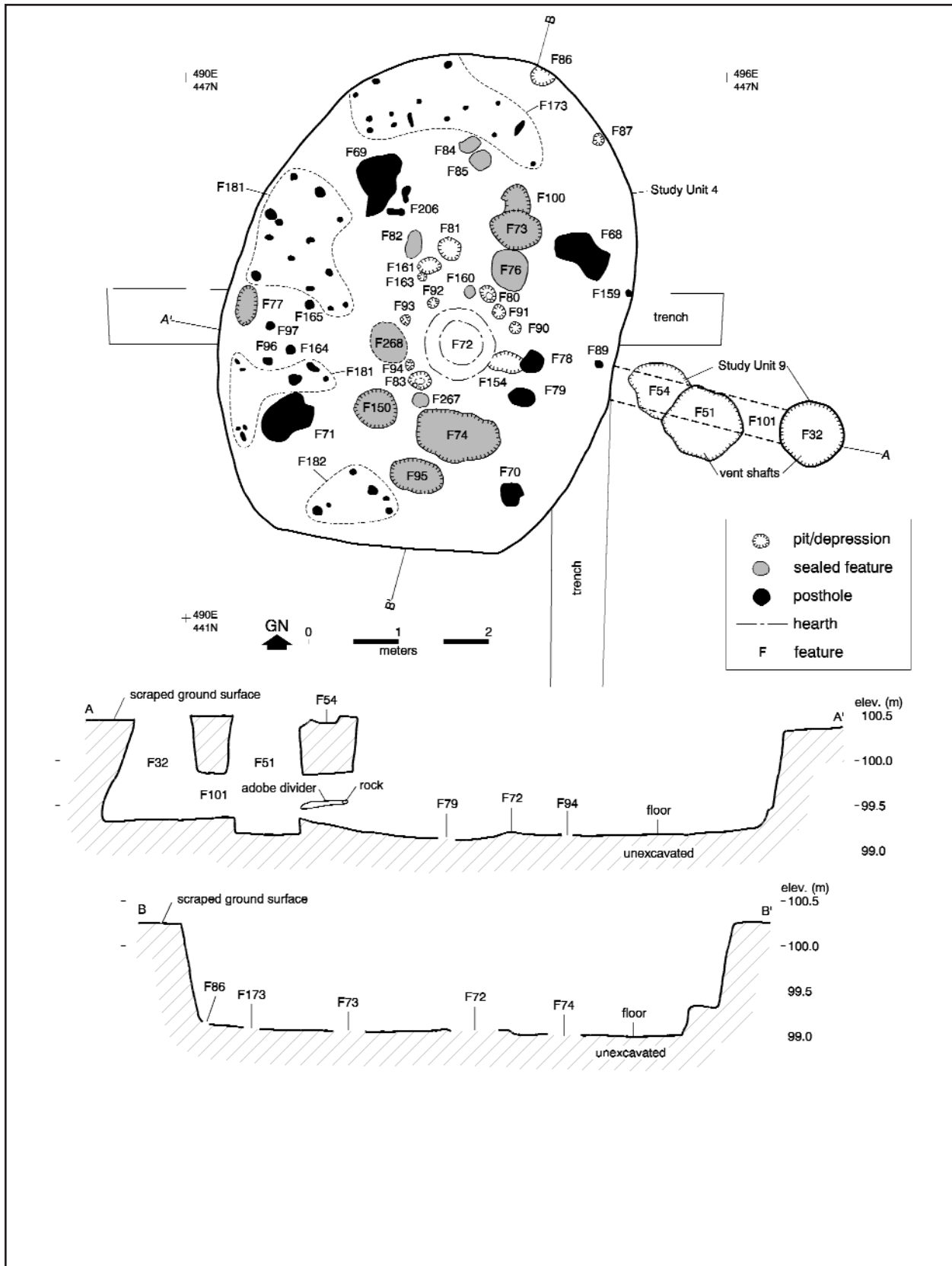


Figure 11.25. Structure 4, plan and profile.

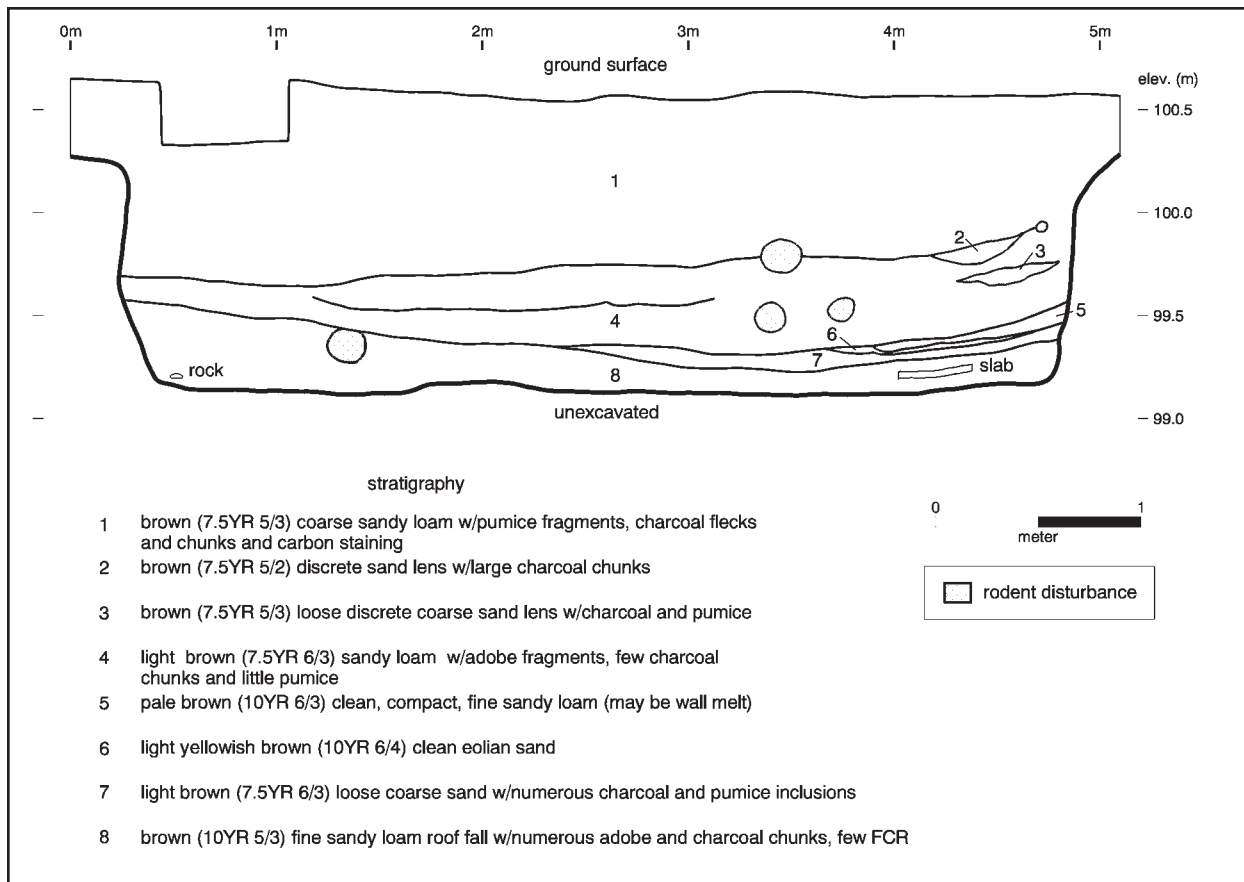


Figure 11.26. Stratigraphy of Structure 4.

loam and adobe fragments with some fire-cracked rock. Stratum 8 may represent the remains of the roof cap material. All three of these strata contain artifacts.

The other five strata were small lenses observed only in the west one-half of the fill. They consisted of sands and sandy loams of varying charcoal contents and grain sizes. Strata 2, 3, and 7 reflected discrete trash dumping episodes and were artifact rich. Stratum 6 was a very thin deposit of eolian sand lying above Stratum 7, and was in turn covered by Stratum 5, which appeared to be adobe wall melt or slump. Strata 5 and 7 contained few artifacts.

Feature 22 was a human burial found in the fill directly above the floor near the wall in the southeast quadrant of the pithouse. The individual was a female, 50+ years old, and interred by placement on her back in a flexed position with the skull oriented west. The individual was laid on a layer of sand covering the floor and in turn covered with a mound of

adobe chunks, which possibly derived from the dismantled roof material (characterized as Stratum 8) covering the floor of the structure. The burial had been disturbed by carnivores and the lower right leg and foot was missing. A Lino Gray pitcher with a strap handle was interred with the individual. She was clearly buried at the time of abandonment of the structure, perhaps just prior to or during removal of the roof support posts and cross-beams.

#### Structure Description

The structure contains a central fire hearth with an associated ash pit and deflector, a four-post roof support system, a total of six highly oxidized "warming pits," and a complex ventilator shaft and tunnel system exhibiting at least one remodeling event. Structure 4 measured 5.46 m north-south by 4.4 m east-west, forming an elongated D-shape—a long oval extending north from a fairly straight south wall, with the

ventilator tunnel and shaft system extending east from the east side of the structure (Fig. 11.24). The structure reached a maximum depth of 1.44 m from the present ground surface and encompassed a floor area of 20.58 sq m. It was the only pit structure on the site with evidence of significant remodeling.

No external entrance was identified during excavation. Access was probably via the rooftop. Two postholes located between the central fire pit and the rear (west) wall of the pithouse (Features 164 and 165) might have served as ladder rests related to an entrance centered over the fire pit.

The floor was well prepared, compacted, and fairly smooth. The lowest level of fill separated cleanly, exposing a hard whitish surface. The lower wall was similarly constructed, but the upper walls had eroded. Walls were intact from heights of 20 cm to 1 m above the floor, and were mostly vertical and smooth. The fill separated cleanly from the intact portions of the walls. Above that, excavation was halted when the contact between the structure fill and the surrounding sterile Bk stratum was encountered. Despite the fact that evidence of considerable remodeling of floor features and roof supports had occurred during the life history of the pithouse, replastering of the floor was limited to a few discrete areas in the vicinity of specific features.

Aside from the roof support postholes, no details of roof construction could be discerned, as all major elements had been removed at the time of abandonment. The four large roof support postholes reflect a typical construction pattern using four primary roof supports arranged in a square pattern centered upon the centrally located fire hearth. Four postholes in the north part of the floor are sealed but may represent earlier primary roof supports. Other evidence of roof repair or replacement was seen as the cross-section shape of the primary roof support postholes, which indicated they may have been reused.

#### *Floor Features*

Forty-three feature numbers (Fig. 11.25) were assigned to floor features in this structure, but

the total number of individual features was much higher. Three feature numbers (Features 173, 181, and 182) were assigned to concentrations of 42 small, possible postholes. Their functions were unclear, but they could have held support posts for above-floor storage features, sleeping structures, or otherwise provided division of internal space within SU 4.

The remainder of the features in use at the time of final abandonment included thermal features (including the primary structure hearth, ash pit, and two oxidized pits), six pot rests, four main roof support postholes, two deflector postholes, seven other postholes, two storage pits, and two features with unknown functions.

In addition, a number of features had been sealed at some point prior to abandonment. These included four oxidized pits, four postholes, two possible storage pits, one possible pot rest, and three pits with unknown functions.

**Fire Pit/Ash Pit/Deflector Complex and Ancillary Thermal Features.** Eight thermal features were identified. These include the primary structure hearth (Feature 72) and ash pit (Feature 154), two oxidized warming pits apparently in use during the final occupation of the structure (Features 80 and 81), and four sealed and oxidized hearth/warming pits used during earlier stages of occupancy.

The primary hearth (Feature 72) was enclosed with an oxidized adobe collar 12–20 cm wide. Its exterior diameter was 80 cm and the hearth measured 46–50 cm on the interior. The hearth was basin shaped with a flat bottom and contained 11 cm of fill comprising four strata. On the base was 2–4 cm of 7.5YR 6/4 sand. It was not continuous across the feature, and its upper surface had been oxidized. Within this sand was a very thin, 0.5–2 cm, lens of 10YR 6/2 light brownish gray, fine-grained compacted silty loam, found only along the perimeter. Above that, 2–6 cm of 10YR 7/1 light gray ash was continuous across the feature, as was the upper stratum of 10YR 5/4 yellowish brown fine-grained sandy loam with bits of adobe. The floor was well-oxidized and only 2–4 cm below the elevation of the surrounding structure floor. When an archaeo-



magnetic sample was taken from the collar, two things were discovered. First, oxidation was noted underneath the collar. Investigation revealed that the oxidation extended south to Feature 74 but had been covered by a thin layer of flooring plaster. Second, the present oxidized base of the hearth was a 1-2-cm-thick cap over a slightly bell-shaped pit. This pit expanded from a diameter of 38 cm at floor level to a diameter of 54 cm at its base, and was 18 cm deep (Fig. 11.27). It contained two strata of fill, an upper 2-4 cm of oxidized sand (7.5YR 4/6 strong brown mottled with 5YR 4/6 yellowish red) overlying a 12-14-cm layer of 7.5YR 4/6 strong brown silty loam. No oxidation was noted on the walls or floor of this pit, which had clearly been used prior to the construction of the hearth itself.

The ash pit (Feature 154) was located between the hearth and the deflector support postholes (Feature 78 and 79). It was an irregular shaped oval, 40-by-23 cm in diameter filled to a depth of 19 cm with fine-grained sand and ash with charcoal flecking. Two postholes for the deflector screen anchor posts measuring 26-to-28-cm deep with basal diameters of 8 and 11 cm (Fig. 11.27) were situated between the ash pit and the wall aperture for the ventilator shaft on the east side of the pithouse (Fig. 11.25).

Another six thermal features were shallow oxidized pits differentiated in part by their burned and fire-cracked rock content. Some of these features contained burned cobbles or fire-cracked rock, while others exhibited evidence of oxidation but no clear indications they had ever contained significant amounts of burned or fire-cracked rock as part of their use cycle.

Two of these oxidized features were not sealed and were apparently in use during the final stages of structure occupancy. Feature 80 was a shallow oval pit, 20-by-17 cm in diameter by 5 cm deep located north of the central hearth. Feature 81 was only slightly smaller and was located slightly further north of the hearth (Fig. 11.25). Neither of these features contained burned rock.

The remaining four thermal features were all sealed, and clearly reflected earlier stages of structure use. Features 73 and 74 (Fig. 11.28) are large oval pits flanking the central hearth on either side of the ventilator/hearth axis. Both of these larger pits were oxidized, contained burned cobbles, and had been sealed with adobe floor plaster (Fig. 11.29). Feature 95 (Fig. 11.28) was another large oval oxidized pit, also sealed, located in the southern portion of the structure about the same distance from the central hearth as Feature 73 was located to the north (Fig. 11.25). Feature 95, however, did not contain burned rocks. The fourth sealed oxidized pit, Feature 83, was much smaller and was situated nearby and southwest of the hearth (Fig. 11.27). This feature did contain fire-cracked rock. This arrangement of warming pits to either side of the central hearth seems typical of other Early Developmental pithouses excavated during the course of the NM 22 project.

**Storage Pits and Miscellaneous Pits.** In addition to the thermal features and pot rests, seven subfloor pits were found. Only Features 86 and 87 were in use at the time of abandonment of SU 4. Both these pits were excavated at an angle underneath the northeast wall of the pithouse. Both were small, measuring 16-by-11 cm in diameter at their openings, and extended 18 cm deep under the wall (Fig. 11.30). The remaining pits (Features 77, 100, 150, 267, and 268) were sealed. Features 100, 267, and 268 were probably used for storage. Feature 100 was slightly bell shaped and was truncated by the construction of Feature 73, a sealed thermal feature (Fig. 11.31). Feature 77 was only partially sealed, and Feature 150 was sealed with multiple layers of capping material that contained an obsidian projectile point between the second and third layers. Features 267 and 268 were so well sealed that they were not discovered until the floor was removed.

No clear evidence of a sipapu floor feature was found. The only candidates along the ventilator/fire pit complex axis to the rear of the structure included Feature 93 (clearly a shal-

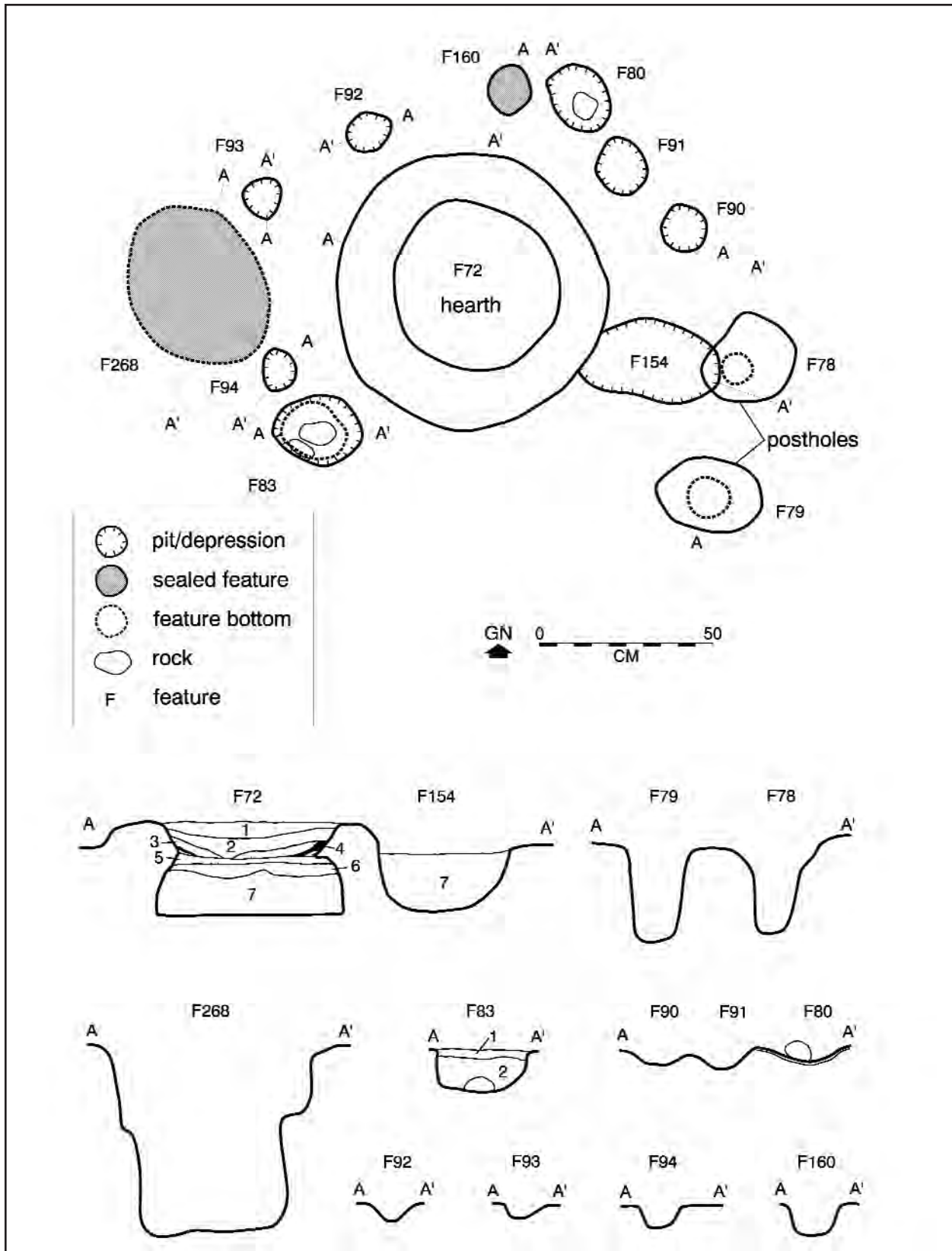


Figure 11.27. Structure 4, central hearth complex.

low pot rest), Feature 165 (provisionally interpreted along with Feature 164 as one of a pair of ladder supports), and Feature 77, a larger oval pit that had been sealed and was not in use during the final phase of occupation.

**Pot Rests.** Seven possible pot rests, characterized as very shallow, nearly round depressions (Features 90, 91, 92, 93, 94, 160, and 163), were found around the primary central hearth (Figs. 11.25, 11.27). All were distributed in an arc clockwise from the southwest to the northeast around the hearth, each located less than 50 cm

away from its adobe collar. With the exception of Feature 160, the only sealed pot rest feature, all are small, shallow, basin-shaped depressions measuring 10 to 18 cm in maximum diameter and 4 to 6 cm in depth. Feature 160 was slightly deeper (9 cm in depth) and had a fairly flat floor and vertical walls, rather than a basin-shaped cross section.

**Postholes.** Many postholes were identified, including four that had been sealed. Large postholes (> 20 cm diameter) included four postholes that held primary roof supports (Feature 68, 69, 70, 71), two deflector supports (Features 78, 79), another four that had been sealed (Feature 76, 82, 84, 85) and one pair (Feature 206) of unknown function (Fig. 11.25).

The primary roof support postholes were all much larger at floor level than at their bases (Fig. 11.32), and some evidence existed to indicate the posts had been shimmed in place. Features 68, 70, and 71 contained rocks in their fill that may have served as chinking elements, and Feature 70 exhibited patches of adobe around the upper circumference of the posthole that may have served as a collar to shim a slightly smaller diameter post. The cross-section shape of the postholes could also be interpreted to reflect an episode of post removal involving excavation to widen the original posthole, and subsequent replacement with new posts requir-

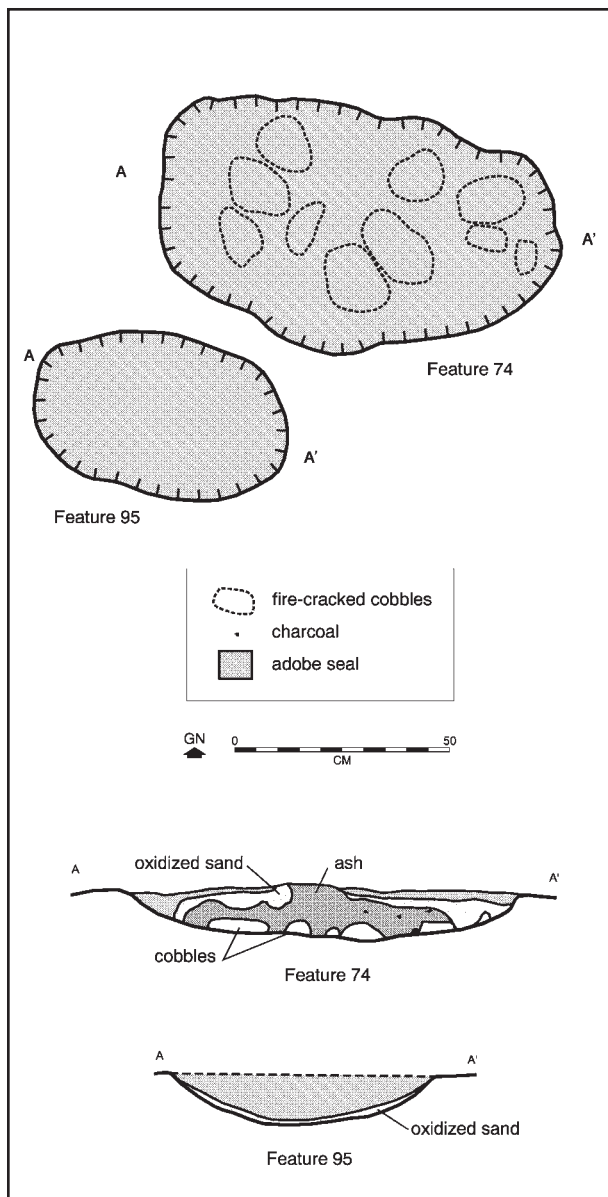


Figure 11.28. Structure 4, thermal features 74 and 95, plan and profile.

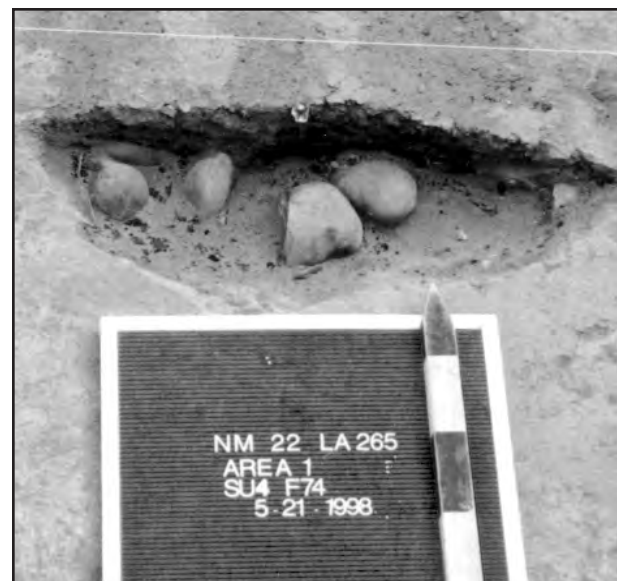


Figure 11.29. Structure 4 thermal feature 74 during excavation.

ing chinking and shimming for stability.

Feature 206 consisted of two oval pits, set at right angles to each other, with the angle formed opening toward the main roof support post in the northwest quadrant of the floor (Feature 69). Each of the two pits was composed of two small postholes: one deeper and one shallower. They may have served to create some type of spatial division around the northwest roof support.

The sealed postholes were all north of the hearth, and may have served as roof supports. Feature 76 and 82 were close to the hearth, while 84 and 85 were closer to the north wall. Feature 84 and 85 were adjacent to each other, with Feature 85 being slightly larger and deeper (Fig. 11.33).

All other postholes were less than 20 cm in diameter, and most were less than 10 cm in diameter. Only one (Feature 89) was located east of the hearth. It was a small posthole at the north edge of the vent shaft tunnel (Feature 101) opening. Its function is unknown, but is possibly related to the ventilator system.

There were so many small postholes that 42 of them were grouped together as three features. Feature 173 was a group of 16 along the north wall, Feature 181 was a group of 20 along the west wall, and Feature 182 was a group of six along the south wall (Fig. 11.32). All of

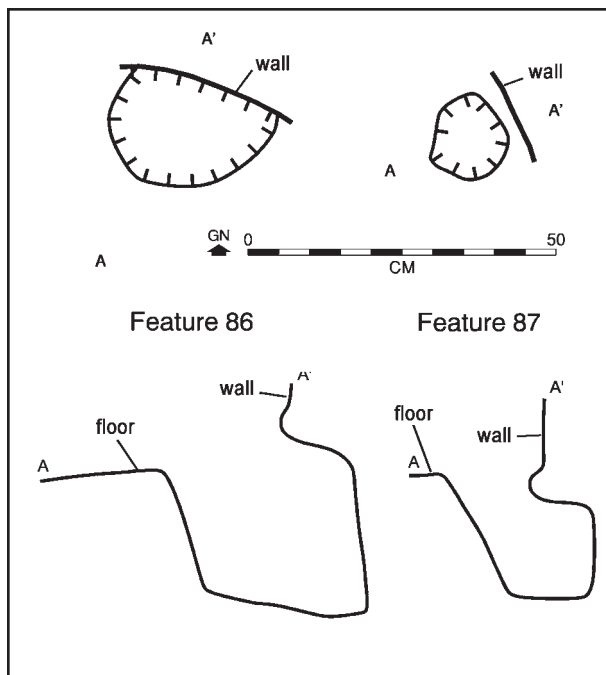


Figure 11.30. Structure 4, pits, Feature 86 and 97.

these varied in size, shape, and depth, and some may be rodent disturbances rather than postholes. Their functions probably related to division of space along the perimeter of the floor of the pithouse, possibly for storage or sleeping structures. Feature 161 is the posthole closest (except for the deflector posts) to the hearth (Feature 72). It was located approximately 1 m north-northwest of the center of the

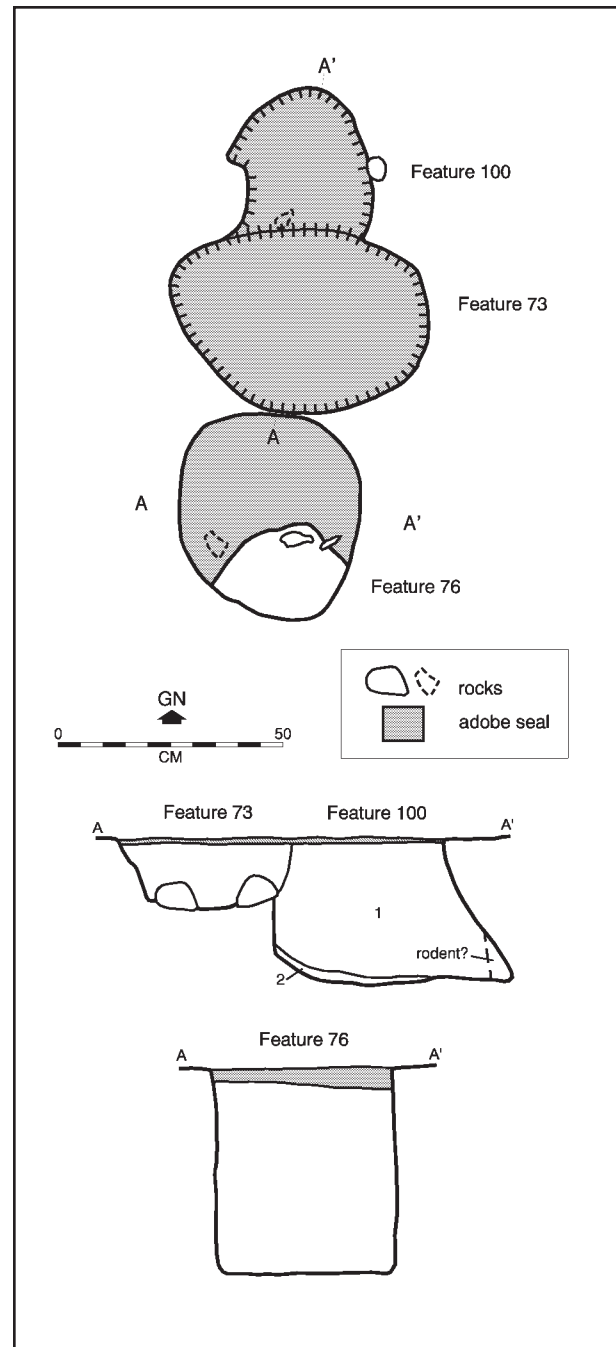


Figure 11.31. Structure 4, Features 73, 76, 100, plan and profile.

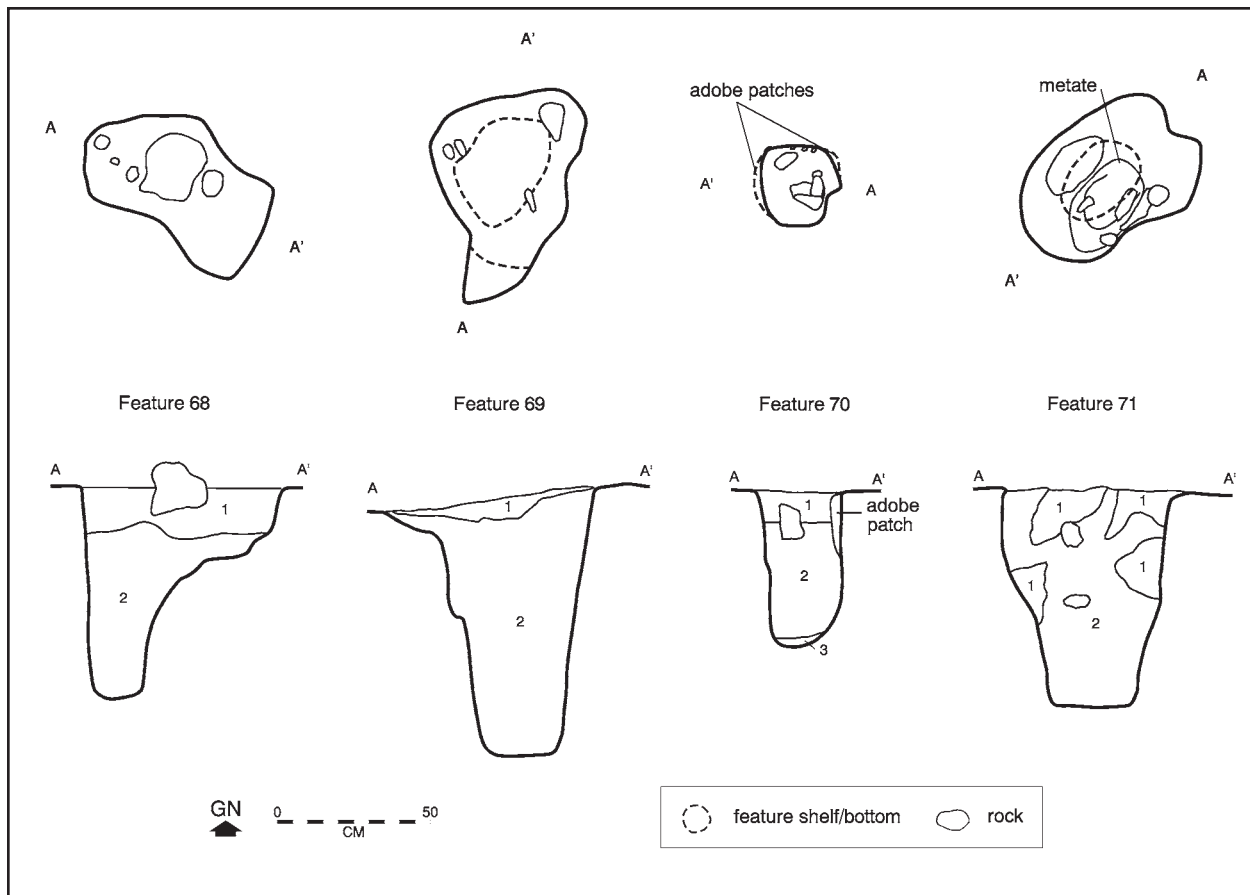


Figure 11.32. Structure 4, primary roof support postholes, plan and profile.

hearth, adjacent to and between an oxidized warming pit (Feature 81) and a pot rest (Feature 163). It was unusual in that it had a 2–6-cm-wide shelf across its north half, 3 cm below the floor surface. Its relationship to Features 81 and 163 is unclear.

**Ventilator Shaft.** The extramural area surrounding Study Unit 4 was initially designated Study Unit 9, and two vertical shafts to the ventilator complex associated with the Study Unit 4 pithouse were documented as part of the Study Unit 9 (Fig. 11.34). The system consisted of two vertical shafts (Feature 32 and 51) and a horizontal tunnel (Feature 101). Feature 51 was the shaft closest to the pithouse wall (less than 1 m at the edge of the pithouse), while Feature 32 was further to the east-south-east (about 2 m away). Feature 51 was slightly deeper, and had vertical walls, while Feature 32 was slightly bell-shaped. A horizontal tun-

nel (Feature 101) connected both to the structure. At its opening into the pithouse, a horizontal divider of adobe and a single rock had been constructed to split the tunnel into an upper and lower portion. This divider extended from the opening of the tunnel in the pithouse wall to Feature 51, the closer of the two vertical shafts.

Neither of the vertical vent shafts appeared to have been sealed and it is unclear whether they were both in use simultaneously or if they reflected a sequence of construction and use. It is possible that Feature 51 was the first shaft in use, along with the lower portion of the tunnel. If it didn't draw well (possibly because it was too close to the structure) a second vertical shaft, Feature 32, may have been dug. The base of Feature 32 was 18–20 cm higher than the base of Feature 51. The top of the horizontal tunnel between the two vertical shafts was roughly the same height as the top

of the tunnel entrance into the structure, suggesting that the opening was remodeled at this time (adding the upper portion). Both Features 32 and 51 were subsequently reused for trash disposal after abandonment of the Study Unit 4 pit structure, and they are described as part of the Study Unit 9 discussion.

### Abandonment

Abandonment was apparently orderly. All posts, as well as the major elements of the roof, had been removed and no evidence of burning was noted. The only remaining traces of roofing material were adobe fragments found in many of the features and the floor contact stratum of the structure fill.

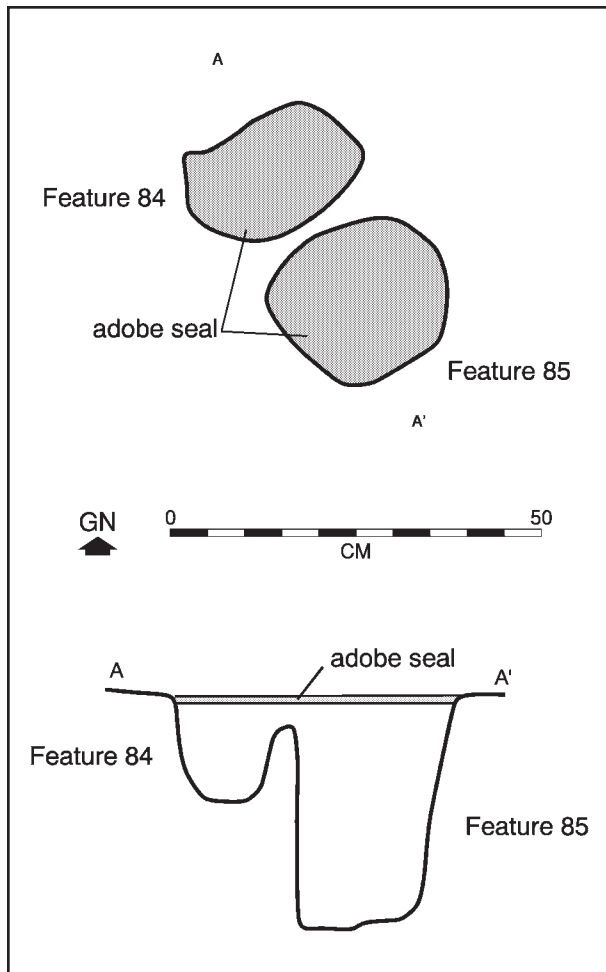


Figure 11.33. Structure 4, postholes, Features 84, 85, plan and profile.

### Artifacts

The full range of domestic artifact classes were recovered from Structure 4 fill, floor contact, and floor and wall features. A total of 172 potsherds, 501 lithic artifacts, and 105 faunal specimens were analyzed and are summarized below.

**Ceramics.** Ceramics were recovered and analyzed from a small sample of the Structure 4 upper fill and roof fall. Floor contact and floor feature ceramics were completely analyzed. Table 11.34 provides the ceramic type distribution by context. There is a repetitive pattern of Middle Rio Grande Plain body sherds with few intrusive or decorated sherds. The few non-local sherds are Tallahogan-like and Jornada Brown varieties. Vessel forms included jars and bowls with a miniature pinch pot fragment recovered from the structure floor and cloudblower fragments from a main posthole (Feature 69).

**Lithic Artifacts.** Lithic artifacts were analyzed from upper fill, roof fall, floor contact, and floor features within Structure 4.

One hundred and eighty-two lithic artifacts were recovered from the upper fill (Table 11.35). Most of the assemblage consisted of chalcedony (41 percent) and nonvesicular igneous materials (35 percent). Other material categories represented by few artifacts are chert ( $n = 21$ ), Jemez obsidian ( $n = 7$ ), and quartzite ( $n = 7$ ). The whole flakes recovered from this provenience indicate an emphasis on later stages of secondary core reduction; 79 percent of the flakes lack dorsal cortex. Flakes with varying amounts of dorsal cortex make up 14 percent of the assemblage. Single-faceted platforms are by far the most abundant platform type (74 percent), also indicating an emphasis on later stages of secondary core reduction. A single multiplatform core manufactured from chalcedony is also represented. A flake with a bidirectionally retouched platform indicates formal tool manufacture of a chert bifacial tool. Unutilized flakes (89 percent) and unutilized small angular debris (8 percent) represent the majority of the lithic assemblage. Two tools were

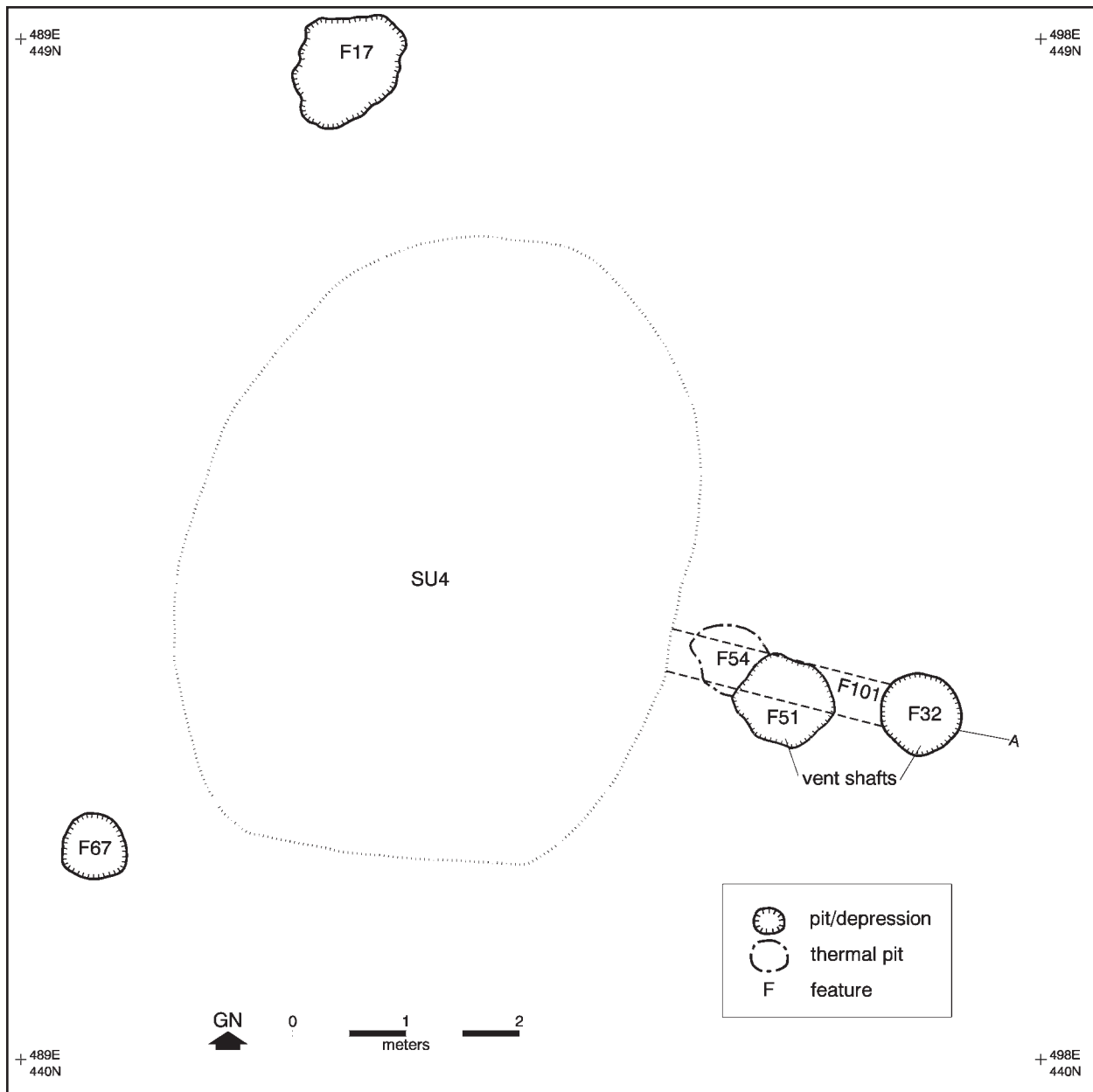


Figure 11.34. Study Unit 9, reused ventilator shafts associated with Study Unit 4, pithouse and other extramural features.

also recovered from this provenience. An expedient flake tool exhibits unidirectional wear typical of scraping on hard media like bone or wood. A basal fragment of an obsidian projectile point was also recorded. No ground stone was recovered from this provenience.

One hundred and seven lithic artifacts were recovered from the roof fall in Structure 4 (Table 11.36). The lithic assemblage was primarily made up of nonvesicular igneous materials (32 percent), chalcedony (29 percent), and chert

(27 percent). Other material types represented by few artifacts are Jemez obsidian ( $n = 10$ ), quartzite ( $n = 2$ ), and sandstone ( $n = 1$ ). The assemblage clearly indicates an emphasis on later stages of secondary core reduction; 91 percent of whole flakes lack evidence of dorsal cortex. Single-faceted platforms typical of later stages of secondary core reduction make up 75 percent of the flakes with platforms. A single obsidian flake with a retouched or prepared platform indicates bifacial tool manufacture.

Table 11.34. LA 265, SU 4, Ceramic Type Distribution

	SU 4 - Upper Fill	SU 4 - Roof Fall	SU 4 - Structure Floor Contact	SU 4 - Human Burial, Lower Fill	SU 4 - All Floor Features	SU 13 - Upper Fill
NRG Plain body	-	-	4	-	-	-
			5.80%			
NRG Mudware	-	-	1	-	-	1
			1.40%			5.00%
MRG Plain rim	3	1	-	1	1	-
	5.90%	2.50%	-	100.00%	9.10%	-
MRG Plain body	40	34	51	-	10	5
	78.40%	85.00%	73.90%	-	90.90%	25.00%
MRG Unfired Plain Grayware	-	-	-	-	-	14
						70.00%
MRG Unpainted undifferentiated	-	-	3	-	-	-
			4.30%			
Slipped Red over white paste (Tallahogan-like)	8	5	4	-	-	-
	15.70%	12.50%	5.80%			
Jornada Brown body	-	-	6	-	-	-
			8.70%			
Total	51	40	69	1	11	20
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

NRG = Northern Rio Grande; Middle Rio Grande

Table 11.35. LA 265, SU 4, Structure 4, Upper Fill, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	14	87.5	1	6.3	-	-	-	-	1	6.3	16
Flake	59	36.2	19	11.7	7	4.3	15	9.2	63	38.7	163	89
Core, Multiplatform	1	100.0	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	1	100.0	-	-	-	-	-	-	1	<1
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	74	40.7	21	11.5	7	3.8	16	8.8	64	35.2	182	100

Table 11.36. LA 265, SU 4, Structure 4, Roof Fall

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	3	60.0	-	-	-	-	-	-	2	40.0	-	-	5
Flake	27	28.1	28	29.2	2	2.1	9	9.4	30	31.3	-	-	96	89
Core, Multiplatform	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Hammerstone	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Projectile Point	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	50.0	1	50.0	2	1
Total	31	29.0	29	27.1	2	1.9	10	9.3	34	31.8	1	0.9	107	100



One multiplatform core and a hammerstone were also recovered. Unutilized flakes (89 percent) and unutilized small angular debris (4 percent) made up the majority of the assemblage. Two complete chalcedony projectile points and a fragment of a marginally retouched flake were also identified. These tools lack evidence of utilization however the marginally retouched artifact exhibits unidirectional retouch forming an edge angle of 58 degrees; it is likely that it was manufactured for scraping purposes. Two indeterminate ground stone fragments, one of fine-grained rhyolite and the other of fine-grained sandstone, indicate a minimum of two grinding implements in the roof fall of Structure 4.

Ninety-nine lithic artifacts were recovered from the floor of Structure 4 (Table 11.37). The majority of the assemblage was made up of chalcedony (42 percent), chert (21 percent), and non-vesicular igneous materials (21 percent). Material categories represented by few lithic artifacts are Jemez obsidian (n = 12) and quartzite (n = 3). The assemblage of whole flakes indicate an emphasis on later stages of secondary core reduction with 80 percent of the flakes lacking dorsal cortex and 71 percent of flakes exhibiting single-faceted platforms. A single obsidian flake exhibits a retouched or prepared platform indicating tertiary bifacial tool manufacture. Two multiplatform chalcedony cores and a chalcedony tested rock were also recovered from the floor assemblage. Unutilized flakes (79 percent) and unutilized small angular debris (11 percent) composed the majority of the assemblage. Both expedient (n = 1) and formal (n = 3) tools were recovered from the floor. A marginally retouched obsidian flake fragment exhibited two retouched edges but lacked evidence of utilization. A chert biface fragment lacked evidence of use and exhibited incomplete functional edges. A second obsidian biface was complete but also lacked evidence of utilization. The proximal portion of a Jemez obsidian projectile point was also recovered. The ground stone assemblage consists of a complete two-hand mano manufactured from coarse-grained rhyolite and a fragment of indeterminate ground stone made of basalt.

One hundred and twelve lithic artifacts

were recovered from the floor features in Structure 4 (Table 11.38). The majority of these artifacts were manufactured from chalcedony (56 percent), nonvesicular igneous materials (22 percent), and Jemez obsidian (12 percent). Material categories exhibiting few lithics are chert (n = 11), vesicular igneous material (n = 1), and "other" igneous materials (n = 1). The combined assemblage indicates an emphasis on later stages of secondary core reduction; 80 percent of whole flakes lack dorsal cortex. Single-faceted platforms represent 58 percent of the flakes with platforms. Four bifacial thinning flakes with retouched or prepared platforms indicate formal tool manufacture; three were manufactured from obsidian and one was manufactured from nonvesicular igneous material. Two multiplatform cores were made of chert and nonvesicular igneous material. Unutilized flakes (75 percent) and unutilized small angular debris made up the majority of the assemblage. The rest of the chipped stone assemblage consists of both expedient (n = 2) and formal (n = 4) tools. One complete marginally retouched flake exhibits unidirectional retouch but lacks evidence of utilization. A utilized flake tool fragment exhibits unidirectional wear typical of scraping on hard media like bone or wood. The utilized functional edge is not complete; it is likely that this tool was used, broken, and discarded in the structure. A complete obsidian projectile point was also recovered. The ground stone assemblage was composed of a complete welded tuff mortar and a fragment of a vesicular basalt indeterminate metate.

**Fauna.** Only 372 faunal specimens were analyzed from Structure 4. Tables 11.39 to 11.41 provide distribution, processing, and age information. Except for the ventilator shafts and tunnel with 267 elements, no other context had more than 40 specimens. Little about consumption, processing, and discard patterns can be inferred from these small samples. While low frequency in the upper fill can be attributed low sample fraction, lower strata and feature contexts were 100 percent analyzed. The

Table 11.37. LA 265, SU 4, Structure 4, Floor Contact

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	36.4	1	9.1	2	18.2	1	9.1	3	27.3	11	11.0
Flake	35	44.3	19	24.1	1	1.3	8	10.1	16	20.3	79	79.0
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Core, Multiplatform	2	100.0	-	-	-	-	-	-	-	-	2	2.0
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Biface	-	-	1	50.0	-	-	1	50.0	-	-	2	2.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Mano, Two-Hand	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Total	42	42.4	21	21.2	3	3.0	12	12.1	21	21.2	99	100.0

Table 11.38. LA 265, SU 4, Structure 4, Floor Features

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	7	53.8	2	15.4	1	7.7	3	23.1	-	-	-	-	13	11
Flake	51	60.7	8	9.5	5	6	20	23.8	-	-	-	-	84	75
Flake, Bifacial Thin	1	25	-	-	3	75	-	-	-	-	-	-	4	3
Flake from Ground Stone	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Core, Multiplatform	1	50	-	-	-	-	1	50	-	-	-	-	2	1
Flake, Utilized	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Flake, Marginal Retouch	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Projectile Point	-	-	-	-	2	100	-	-	-	-	-	-	2	1
Biface	-	-	-	-	2	100	-	-	-	-	-	-	2	1
Metate, Unknown	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Mortar	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
Total	61	54.5	11	9.8	13	11.6	25	22.3	1	0.9	1	0.9	112	100

low frequency of animal bone and ceramics suggest limited refuse deposition within Structure 4 following its abandonment. The presence of comensals that move into an occupied or recently abandoned houses (cricetid and *Peromyscus*), and burrowers (pocket gophers and kangaroo rats) suggest the structure was not tended or regularly visited after abandonment.

Structure 4 assemblages are dominated by small mammals, particularly desert cottontail with a few other species that were likely to have been food items (prairie dogs and woodrats). A weasel mandible found in Feature 76 is unusual. Artiodactyl species diversity is comparatively low, with possibly only deer found. An eagle talon was recovered from the structure floor. An unusual number and variety of toads were also recovered from floor features and the ventilator shafts.

Burning is relatively high in the fill, but samples are small. Preservation is generally good but with appreciable pitted bone in the upper fill (35.7 percent) and floor features (29.7 percent). With the exception of one piece of carnivore-gnawed bone in the upper fill, all of the animal-affected bone is from the ventilator shafts and tunnel.

Potential evidence of processing is found throughout in small numbers. From the upper fill there was a deer femur with an impact mark at the proximal end. From roof fall, a bone flake from was removed from an artiodactyl long bone shaft and deer tibia. The same long bone shaft displayed transverse cuts at the distal end. Floor contact had an artiodactyl rib with a midshaft impact mark and radius with oblique cuts and an impact mark on the midshaft portion. Processing evidence from floor features includes Feature 154 with a

Table 11.39. LA 265, Structure 4, Summary of Fauna

	508: Upper Fill		511: Human Burial-lower fill		509: Roof Fall		510: Floor Contact		512: Floor Features		541: Vent Shafts and Tunnels		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
	Small maml/med to lrg bird	-	-	-	-	-	-	-	-	-	-	2	0.7%	2
Small mammal	1	7.1%	1	33.3%	2	8.3%	3	11.1%	9	24.3%	50	18.7%	66	17.7%
Small to medium mammal	-	-	-	-	2	8.3%	-	-	-	-	3	1.1%	5	1.3%
Medium to large mammal	1	7.1%	1	33.3%	2	8.3%	1	3.7%	2	5.4%	8	3.0%	15	4.1%
Large mammal	-	-	-	-	-	-	1	3.7%	1	2.7%	15	5.6%	17	4.6%
Black-tailed prairie dog	-	-	-	-	-	-	1	3.7%	-	-	2	0.7%	3	0.8%
Gunnison's prairie dog	-	-	-	-	-	-	-	-	-	-	1	0.4%	1	0.3%
Botta's pocket gopher	-	-	-	-	-	-	-	-	1	2.7%	-	-	1	0.3%
Yellow-faced pocket gopher	-	-	-	-	-	-	6	22.2%	-	-	-	-	6	1.6%
Banner-tailed kangaroo rat	-	-	-	-	1	4.2%	-	-	-	-	-	-	1	0.3%
Cricetid rodents	-	-	-	-	-	-	-	-	-	-	2	0.7%	2	0.5%
<i>Peromyscus</i> sp.	-	-	-	-	-	-	-	-	-	-	4	1.5%	4	1.1%
Woodrats	-	-	-	-	1	4.2%	-	-	1	2.7%	3	1.1%	5	1.3%
cf. White-throated woodrat	-	-	-	-	-	-	-	-	1	2.7%	2	0.7%	3	0.8%
cf. Bushy-tailed woodrat	-	-	-	-	-	-	-	-	-	-	9	3.4%	9	2.4%
Small rodent	-	-	-	-	-	-	-	-	-	-	2	0.7%	2	0.5%
Medium to large rodent	-	-	-	-	-	-	1	3.7%	-	-	4	1.5%	5	1.3%
Desert cottontail	3	21.4%	-	-	5	20.8%	5	18.5%	14	37.8%	123	46.1%	150	40.3%
Black-tailed jackrabbit	2	14.3%	-	-	7	29.2%	2	7.4%	3	8.1%	8	3.0%	22	5.9%
Long-tailed weasel	-	-	-	-	-	-	-	-	1	2.7%	-	-	1	0.3%
Badger	1	7.1%	-	-	-	-	-	-	-	-	-	-	1	0.3%
Medium artiodactyl	5	35.7%	1	33.3%	2	8.3%	6	22.2%	3	8.1%	16	6.0%	33	8.9%
Deer or elk	-	-	-	-	1	4.2%	-	-	-	-	-	-	1	0.3%
Mule deer	1	7.1%	-	-	1	4.2%	-	-	-	-	1	0.4%	3	0.8%
Golden eagle	-	-	-	-	-	-	1	3.7%	-	-	-	-	1	0.3%
Scaled quail	-	-	-	-	-	-	-	-	-	-	2	0.7%	2	0.5%
Horned lark	-	-	-	-	-	-	-	-	-	-	4	1.5%	4	1.1%
cf. Great plains toad	-	-	-	-	-	-	-	-	1*	2.7%	2	0.7%	3	0.8%
Plains or Woodhouse's toad	-	-	-	-	-	-	-	-	-	-	2*	0.7%	2	0.5%
cf. Red spotted toad	-	-	-	-	-	-	-	-	-	-	2**	0.7%	2	0.5%
<b>Total</b>	<b>14</b>	<b>100.0%</b>	<b>3</b>	<b>100.0%</b>	<b>24</b>	<b>100.0%</b>	<b>27</b>	<b>100.0%</b>	<b>37</b>	<b>100.0%</b>	<b>267</b>	<b>100.0%</b>	<b>372</b>	<b>100.0%</b>
Immature (1/2-2/3 grown)	-	-	-	-	-	-	-	-	-	-	3	1.1%	3	0.8%
Burned	3	21.4%	-	-	6	25.0%	4	14.8%	6	16.2%	34	12.7%	53	14.2%
Indeterminate	-	-	-	-	-	-	-	-	-	-	2	0.7%	2	0.5%
Complete	1	7.1%	-	-	1	4.2%	4	14.8%	10	27.0%	37	13.9%	53	14.2%
>75% complete	-	-	-	-	2	8.3%	2	7.4%	3	8.1%	16	6.0%	23	6.2%
50-75% complete	2	14.3%	-	-	-	-	2	7.4%	1	2.7%	5	1.9%	10	2.7%
25-50% complete	4	28.6%	-	-	2	8.3%	3	11.1%	5	13.5%	48	18.0%	62	16.7%
<25% complete	7	50.0%	3	100.0%	19	79.2%	16	59.3%	18	48.6%	161	60.3%	224	60.2%

\* denotes a skeleton counted as one specimen

Table 11.40. LA 265, SU 4 Features, Summary of Fauna

	Feature 70		Feature 72		Feature 76		Feature 154		Feature 267		Feature 268	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	-	-	4	21.1%	-	-	3	60.0%	2	40.0%
Medium to large mammal	-	-	-	-	1	5.3%	-	-	1	20.0%	-	-
Large mammal	1	25.0%	-	-	-	-	-	-	-	-	-	-
Botta's pocket gopher	-	-	-	-	1	5.3%	-	-	-	-	-	-
Woodrats	-	-	1	100.0%	-	-	-	-	-	-	-	-
cf. White-throated woodrat	-	-	-	-	1	5.3%	-	-	-	-	-	-
Desert cottontail	3	75.0%	-	-	8	42.1%	-	-	-	-	3	60.0%
Black-tailed jackrabbit	-	-	-	-	2	10.5%	1	33.3%	-	-	-	-
Long-tailed weasel	-	-	-	-	1	5.3%	-	-	-	-	-	-
Medium artiodactyl	-	-	-	-	-	-	2	66.7%	1	20.0%	-	-
cf. Great plains toad	-	-	-	-	1*	5.3%	-	-	-	-	-	-
<b>Total</b>	<b>4</b>	<b>100.0%</b>	<b>1</b>	<b>100.0%</b>	<b>19</b>	<b>100.0%</b>	<b>3</b>	<b>100.0%</b>	<b>5</b>	<b>100.0%</b>	<b>5</b>	<b>100.0%</b>
Immature	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Burned	3	75.0%	1	100.0%	-	-	-	-	-	-	2	40.0%
Complete	2	50.0%	1	100.0%	7	36.8%	-	-	-	-	-	-
>75% complete	-	-	-	-	3	15.8%	-	-	-	-	-	-
50-75% complete	-	-	-	-	1	5.3%	-	-	-	-	-	-
25-50% complete	1	25.0%	-	-	2	10.5%	-	-	-	-	2	40.0%
<25% complete	1	25.0%	-	-	6	31.6%	3	100.0%	5	100.0%	3	60.0%

\* denotes a skeleton counted as one specimen

Table 11.41. LA 265, Structure 4 Vent Tunnel and Shafts, Faunal Summary

	Feature 32 Vent Shaft 1		Feature 51 Vent Shaft 2		Feature 101 Vent Tunnel	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med. to lrg. bird	-	-	2	1.2%	-	-
Small mammal	15	19.5%	31	18.3%	4	19.0%
Small to medium mammal	-	-	3	1.8%	-	-
Medium to large mammal	3	3.9%	5	3.0%	-	-
Large mammal	11	14.3%	-	-	4	19.0%
Black-tailed prairie dog	2	2.6%	-	-	-	-
Gunnison's prairie dog	1	1.3%	-	-	-	-
Cricetid rodents	-	-	2	1.2%	-	-
Peromyscus sp.	1	1.3%	3	1.8%	-	-
Woodrats	3	3.9%	-	-	-	-
cf. White-throated woodrat	2	2.6%	-	-	-	-
cf. Bushy-tailed woodrat	-	-	9	5.3%	-	-
Small rodent	1	1.3%	1	0.6%	-	-
Medium to large rodent	-	-	3	1.8%	1	4.8%
Desert cottontail	26	33.8%	88	52.1%	9	42.9%
Black-tailed jack rabbit	4	5.2%	3	1.8%	1	4.8%
Medium artiodactyl	3	3.9%	13	7.7%	-	-
Mule deer	-	-	1	0.6%	-	-
Scaled quail	1	1.3%	1	0.6%	-	-
Horned lark	2	2.6%	1	0.6%	1	4.8%
cf. Great plains toad	-	-	2	1.2%	-	-
Plains or Woodhouse's toad	-	-	1	0.6%	1*	4.8%
cf. Red spotted toad	2**	2.6%	-	-	-	-
Total	77	100.0%	169	100.0%	21	100.0%
Immature (1/2-2/3 grown)	-	-	2	1.2%	1	4.8%
Burned	7	9.1%	27	16.0%	-	-
Complete	9	11.7%	28	16.6%	-	-
>75% complete	3	3.9%	13	7.7%	-	-
50-75% complete	-	-	4	2.4%	1	4.8%
25-50% complete	8	10.4%	37	21.9%	3	14.3%
<25% complete	57	74.0%	87	51.5%	17	81.0%

\* denotes a skeleton counted as one specimen

jackrabbit humerus exhibiting a spiral break. Feature 267 contained two small mammal long bones exhibiting spiral breaks and an artiodactyl flat bone fragment with an impact mark. The ventilator shafts had a prairie dog cranium with an impact mark, a deer humerus with an impact mark on the midshaft, and a cottontail humerus with a spiral break.

**Miscellaneous Artifacts.** Shell artifacts were recovered from throughout Structure 4 fill and floor. Four *Anodonta californiensis* shells were

recovered. One was a fragment from structure upper fill, one was a fragment from roof fall. A pendant fragment and a pendant preform were recovered from roof fall. A fragment was recovered from Feature 154, the ash pit.

#### Summary

Structure 4, an Early Developmental pit structure was located south of Structure 1. It is a smaller house with a conventional architectural form and intramural layout, typical of a domicile. Within its

20.58 sq m floor area, it contained a central fire hearth with an associated ash pit and deflector and six highly oxidized "warming pits," with an east-southeast complex ventilator shaft and tunnel system. Total floor space could have housed five to seven individuals, but the floor feature configuration suggests that only the west half of the structure was available for sleeping. This reduced area could have housed three to five people.

The thermal features display a distinct north-south arrangement on the hearth/ash pit/ventilator axis. This arrangement effectively divides the structure into east and west halves with the east half potentially supporting daily domestic activities and the west half with the numerous divots and small, ancillary pits supporting non-thermal processing activities. Interestingly, almost all of the thermal features were capped at abandonment suggesting that the terminal occupation utilized more open space. The many divots and ancillary pits in the west half were not sealed indicating that they were associated with this terminal occupation and use. The sealing of floor features, as part of remodeling was observed for Structure 50 at LA 6170, which may be contemporaneous with Structure 4.

The structure was unburned and the roof was intentionally dismantled shortly after the feature was abandoned. In addition to the primary hearth complex and ancillary thermal features, the floor of the structure contained numerous small postholes, pot rests, and storage pits, several of which had been sealed, indicating at least one floor remodeling episode had taken place. It was the only pit structure on the site with evidence of significant remodeling.

Archaeomagnetic dating suggests that Structure 4 post-dated Structure 13 and predated Structure 1 at LA 265. It was contemporary with Structure 4 at LA 6169, Structure 50 at LA 6170, and Structure 9 at LA 6171. Unlike Structure 50, LA 6170, but similar to Structure 4, LA 6169, Structure 4 was not burned at abandonment. Apparently the major support and roofing members were removed and probably reused. Limited refuse filling of the pit struc-

ture depression suggests that the immediate area within LA 265 was abandoned.

## STUDY UNIT 9

Study Unit 9 is an extramural area immediately surrounding Structure 4, encompassing grid units 441-450N/488-504E. No cultural features were found east of grid line 498E however (Fig. 11.35). Three features in Study Unit 9 include the two vertical shafts (Features 32 and 51) and the horizontal tunnel (Feature 101) comprising the ventilator complex for Structure 4. These features are described here because they were subsequently used as trash receptacles after the pithouse was abandoned. The remaining features include two shallow basin-shaped pits (Features 17 and 67) and a large rock-lined thermal feature (Feature 54).

### *Ventilator Complex Associated with Structure 4*

The ventilator complex associated with Structure 4 consisted of a horizontal tunnel (Feature 101) extending from slightly above floor level outward from the east side of the structure, and two vertical shafts (Features 32 and 51) extending downward from the ground surface to intersect the tunnel at depths of 117 cm and 132 cm below surface, respectively. The complex had clearly undergone remodeling during its use. A possible sequence of construction may have involved digging an original ventilator consisting of the Feature 51 vertical shaft and a short 80-cm-long segment of the horizontal Feature 101 tunnel. Sometime later, the horizontal tunnel may have been extended another 120 cm to the east, and a second vertical shaft (Feature 32) was constructed. Both vertical ventilator shafts were subsequently filled with trash deposits, presumably after the pit structure itself was abandoned. It is unclear whether these features also might have served as subsurface storage facilities prior to their use for trash disposal.

Feature 101 is a horizontal ventilator tunnel that originates at a floor level opening in the east wall of Structure 4 and runs east for 2

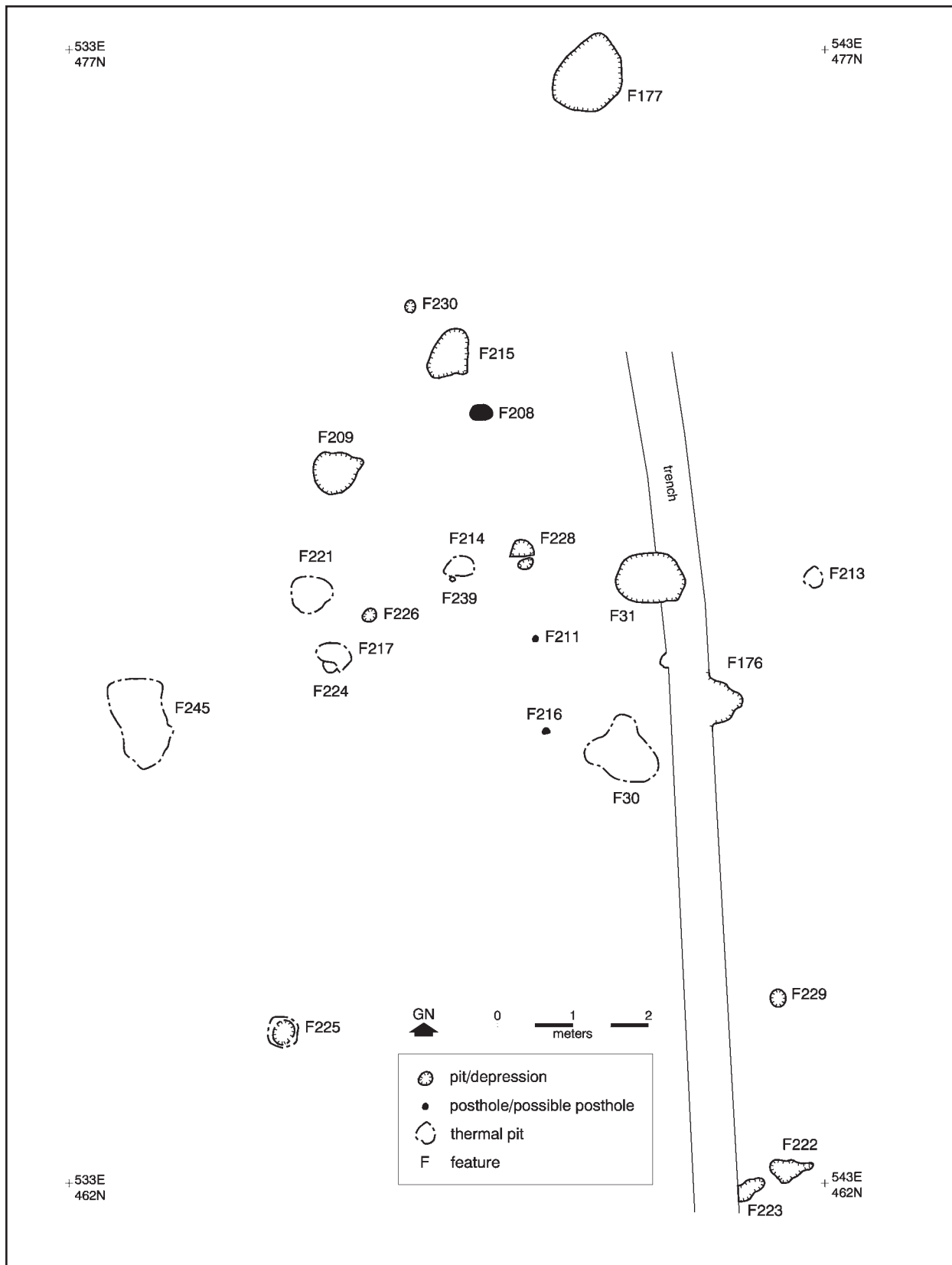


Figure 11.35. Distribution of features in Area 2 in the vicinity of Structure 13.

m. The tunnel is intersected by two vertical ventilator shafts. Feature 51 is located 80 cm east of the pit structure and Feature 32 is located at the end of the tunnel 2.0 m east of the pit structure. The opening of the tunnel in the pit structure wall is 50 cm wide by 70 cm high. The floor of the ventilator tunnel is at the same level as the structure floor through the point it intersected the westernmost vertical shaft (Feature 51), and then sloped upward 15 cm and remained at that higher level for the rest of its length. The ceiling of the ventilator tunnel appears to be at the same level for its entire length.

The westernmost segment of the tunnel apparently had been remodeled at some point by the addition of a horizontal baffle of adobe near its opening into the pit structure. This created two chambers leading to the Feature 51 shaft. No clear evidence of a sequence of use was revealed during excavation. Upper fill of the tunnel, corresponding to the upper chamber, consisted of a light yellow brown sandy matrix containing a few pieces of charcoal and rocks, similar in appearance to Stratum 3 of the Feature 51 fill. The lower fill of the tunnel, corresponding to the lower chamber, consisted of a more compacted matrix of the same color and appeared to be similar to Stratum 4 of the Feature 51 fill. Very few artifacts were found in Feature 101, but may rodent bones were recovered. This may point to the possibility that both chambers of the ventilator tunnel were in operation during its term of use, and then filled as trash and dumped into Feature 51 after the pit structure was abandoned.

Feature 32 is a vertical ventilator shaft 68 cm by 62 cm in diameter extending from the ground surface 117 cm deep to the base of the horizontal ventilator tunnel (Feature 101) leading to the east side of Structure 4. The horizontal ventilator tunnel intersects the western perimeter of the Feature 32 shaft at a distance of 2.0 m from the pit structure. The bottom of Feature 32 flares outward slightly on its eastern side. Like Feature 51, Feature 32 was used for trash disposal after being discontinued as a ventilator shaft, presumably after the abandon-

ment of Structure 4. The uppermost Stratum 1 in Feature 32 was a 40-to-60-cm-thick cone-shaped deposit of brown sandy fill (10YR 4/3) containing abundant lithic debitage, ceramics, bone, a piece of ground stone, and small pieces of charcoal. A distinct localized lens of more indurate fill also containing charcoal was found at a depth of 13 cm to 16 cm in the central part of the feature, most probably indicating an isolated dump episode during the time frame Stratum 1 was accumulating. Stratum 2 extended from 40 to 60 cm to a depth of 115 cm, and was also a cone-shaped midden deposit consisting of yellow-brown (10YR 5/4) sandy loam, containing lithics, ceramics, bone, charcoal, ground stone, burned rock, and chunks of adobe clay. Twenty-one pieces of burned and fire-cracked rock (10 kg) and 15 pieces of adobe (4 kg) were recovered from the western one-half of the fill from this stratum. Stratum 3 was a thin, 2-cm-thick, lens of sand lying directly on the bottom of the feature, and most probably reflects the accumulation of wind-blown materials deposited when the ventilator complex was still in use.

Feature 51 is a cylindrical ventilator shaft 80 cm in diameter extending from the ground surface 132 cm deep to the base of the horizontal ventilator tunnel (Feature 101) which extends outward from the eastern side of Structure 4. Feature 51 intersects the horizontal tunnel 80 cm from the pithouse wall. No evidence of timber shoring, slab facing, or adobe plaster was observed. After the ventilator shaft stopped being used (presumably when pithouse Study Unit 4 was abandoned), it was filled with trash. It is unknown whether the feature may have served as a storage facility for a period of time immediately after its use as a ventilator shaft but prior to being used for trash disposal. Four strata were identified in the fill. The uppermost Stratum 1 consisted of a 27-cm-thick deposit of ashy brown sandy fill (10YR 4/3) containing a few flecks of charcoal but no artifacts. Stratum 2 was a 14-cm-deep layer of yellow-brown (10YR 5/4) fine-grained silty loam containing a few ceramic and lithic artifacts. Stratum 3 was an 82-cm-deep layer of

relatively unconsolidated brown sandy silt (10YR 4/3) containing charcoal fragments, pumice grains, ceramic fragments, lithic artifacts, a considerable amount of bone, metate fragments, and fire-cracked and burned rock. This trash midden layer was resting on the lowermost Stratum 4, an 11-cm-thick lens of silty loam containing a few small pieces of charcoal and small rodent bones, which did not appear to reflect processing for consumption. Forty-five pieces of burned and fire-cracked rock recovered from the entire feature fill, but mostly from Stratum 3, weighed 9 kg.

Feature 17 is an oval basin-shaped thermal pit measuring 130-by-106 cm in outline and 33 cm deep, located 1.65 m north of Structure 4. The pit contains an upper 26-cm-thick stratum of light yellow-brown (10YR 6/4) sandy loam with abundant ceramics and lithics. The lower stratum is 7 cm thick and contains dark gray fill with pieces of charcoal, burned bone, and burned clay in addition to ceramics and lithics. Portions of the base and sides of the pit are oxidized, indicating its use as a thermal feature. Very little burned or fire-cracked rock was noted in the fill or nearby the feature.

Feature 54 is a circular basin-shaped thermal pit measuring 60 cm in diameter by 10 cm deep located directly west and partially intersecting the upper level of midden fill of the Feature 51 ventilator shaft. The bottom of Feature 54 was lined with cobbles and slabs. Fill consisted of a brown to dark brown 10YR 4/3 sandy loam containing lithic and ceramic artifacts, charcoal, and bone. Burned and fire-cracked rock removed from the southern one-half of the pit weighed 4 kg. The use of Feature 54 seems to have post-dated the final stages of using Feature 51 as a trash pit, because burned and fire-cracked rock from the use of Feature 54 were distributed in the very upper levels of Feature 51 fill.

Feature 67 is a shallow, oval, basin-shaped pit located 1.1 m southwest of Structure 4. The feature measures 65-by-56 cm in major and minor axes, was 10 cm deep, and contained a single stratum of dark gray-brown (10YR 4/2) sandy loam exhibiting charcoal flecks and

pumice grains. A few lithics, ceramic fragments, and one small piece of fire-cracked rock were also found in the fill. Other than the charcoal in the fill, no evidence of burning was noted on the margins or base of the pit.

### *Artifacts*

Artifacts were recovered from all of the Study Unit 9 contexts totaling 100 sherds, 336 lithic artifacts, and 12 animal bones. The analyzed assemblages are summarized below.

**Ceramics.** The 100 sherds were predominantly from the Structure 4 ventilator shafts and tunnel (Table 11.42-43). Ceramic types are dominated by Middle Rio Grande Plain wares with a few mineral painted and Tallahogan-like sherds also identified. The assemblage is similar to the fill of Structure 13 in Area 2. Vessel forms are dominated by jar body and neck sherds with a low proportion showing any evidence of cooking wear.

**Lithic Artifacts.** The 336 lithic artifacts were predominantly from the ventilator shafts and tunnel for Structure 4. Other extramural features yielded low frequencies of incidentally deposited artifacts.

Two hundred and ninety-eight lithics were recovered from vent shafts and tunnels between Study Unit 9 and Study Unit 4 (Table 11.44). The majority of the assemblage consists of chalcedony (38 percent), nonvesicular igneous materials (24 percent), Jemez obsidian (22 percent), and chert (12 percent). Low frequencies of quartzite ( $n = 9$ ), "other" local ( $n = 3$ ), sandstone ( $n = 2$ ), and "other" igneous ( $n = 1$ ). The assemblage generally indicates an emphasis on later stages of secondary core reduction—80 percent of the whole flakes lack dorsal cortex. Fifty-five percent of the flakes with platforms were either single or multifaceted. Four multiplatform cores were manufactured from chalcedony ( $n = 2$ ) and chert ( $n = 2$ ). The Jemez obsidian, on the other hand, clearly indicates an emphasis on formal tool manufacture. Of 19 Jemez obsidian bifacial thinning



flakes, 10 exhibit retouched platforms. Unutilized flakes (79 percent) and unutilized small angular debris (8 percent) make up the majority of the assemblage. In addition, the assemblage contains a number of both expedient and formal tools. A medial portion of a utilized flake, manufactured from nonvesicular igneous material, exhibits bidirectional rounding and striations parallel to the use edge. This type of wear pattern is consistent with bidirectional cutting or reciprocal sawing. The functional edge is incomplete indicating that the tool was used, broken, and discarded. Three marginally retouched flake fragments are made of chert—two were bidirectionally retouched and a third exhibited unidirectional retouch. One of the bidirectionally retouched tools exhibited bidirectional polish typical of prolonged cutting or reciprocal sawing. It appears that the tool broke during use, as the functional edge was not complete. The remaining retouched flakes lack evidence of utilization and do not exhibit complete functional edges. It is likely that these tools were broken during manufacture. Four bifaces, three manufactured from Jemez obsidian and the fourth from nonvesicular igneous material, were recovered from this provenience. Two bifaces were whole and exhibited complete functional edges yet lacked evidence of utilization. The absence of identifiable wear patterns may indicate that they were used for something other than cutting on hard media. Many wear patterns are not visible using low power magnification (30x–60x). The remaining biface fragments lacked complete functional edges and may represent manufacturing failures.

Five ground stone artifacts indicate four grinding implements. Two fragments of fine-grained sandstone represent an indeterminate metate. Two whole expedient handstones were manufactured from nonvesicular igneous materials and "other" igneous materials. A quartzite cobble exhibited a pigment residue on its grinding surface. A flake from a piece of indeterminate ground stone was also recovered.

Twenty-one lithic artifacts were recovered from the upper hearth in Study Unit 9 (Table

11.45). The majority were manufactured from chalcedony (n = 10) and nonvesicular igneous materials (n = 8). Smaller numbers of chert (n = 2) and Jemez obsidian (n = 1) were also recovered. Although the assemblage is small, all of the whole flakes (n = 10) lack dorsal cortex, indicating an emphasis on later stages of secondary core reduction. There is no evidence of primary core reduction. A single obsidian bifacial thinning flake indicates that bifacial tool manufacture occurred. No formal chipped stone tools or ground stone implements were recovered.

Twenty-seven lithic artifacts were recovered from all other features in Study Unit 9 (Table 11.46). Material categories represented are chalcedony (n = 11), nonvesicular igneous materials (n = 6), chert (n = 5), Jemez obsidian (n = 4), and quartzite (n = 1). The majority of the whole flakes lack dorsal cortex indicating an emphasis on later stages of secondary core reduction. There is no evidence of primary core reduction or formal tool manufacture.

The twelve faunal bones analyzed from Study Unit 9 offer little room for interpretation (Table 11.47). Overall, the small assemblage appears to be a domestic deposit with the majority of the specimens less than 25 percent complete and unburned. Small mammals predominate with toad and artiodactyl nominally present.

### *Summary*

Study Unit 9 consisted of the ventilator shaft and tunnel for Structure 4 and three ancillary extramural pit features. The ventilator shaft construction suggests one or more remodeling episodes, which is consistent with the Structure 4 intramural remodeling evidence. The area immediately surrounding Structure 4 was minimally used before or after the structure construction, use, and abandonment. The ancillary pits included two thermal features and an undifferentiated pit. Thermal features are likely associated with residential occupations represented by Structure 1, the pocket structures, or the unexcavated pit structure west of the right-of-way adjacent to Study Unit 2.

Table 11.42. LA 265, SU 3 and SU 9 Ceramic Type Distributions

	537: SU 3, Small Pits on the Edge of Feature 15	538: SU 3, Vent Shaft to Unexcavated Pit Structure	539: SU 3, Hearths/ Roasting Pits	540: SU 3, All Other Features	541: SU 9, Vent Shafts and Tunnels to SU 4	542: SU 9, Upper Hearth
NRG Mudware	-	-	1	-	-	-
	-	-	0.5%	-	-	-
MRG Plain rim	3	2	-	2	2	-
	13.6%	2.1%	-	3.0%	2.6%	-
MRG Plain body	19	90	175	61	72	4
	86.4%	92.8%	92.1%	91.0%	92.3%	80.0%
MRG Unpainted undifferentiated	-	-	2	2	-	1
	-	-	1.1%	3.0%	-	20.0%
MRG Mineral Paint (undiff)	-	-	-	-	1	-
	-	-	-	-	1.3%	-
San Marcial Black-on-white	-	-	4	1	1	-
	-	-	2.1%	1.5%	1.3%	-
Slipped Red over white paste (Tallahogan-like)	-	-	5	1	2	-
	-	-	2.6%	1.5%	2.6%	-
Slipped over red paste	-	1	-	-	-	-
	-	1.0%	-	-	-	-
Jornada Brown body	-	-	1	-	-	-
	-	-	0.5%	-	-	-
San Francisco Red	-	4	1	-	-	-
	-	4.1%	0.5%	-	-	-
Alma Plain body	-	-	1	-	-	-
	-	-	0.5%	-	-	-
Total	22	97	190	67	78	5
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NRG = Northern Rio Grande; MRG = Middle Rio Grande

Table 11.43. LA 265, SU 9, 11, 12, and 14 Ceramic Type Distributions

	543: SU 9, All Other Features	544: SU 11, Fire- Cracked Rock Scatter	545: SU 12, Hearths/ Roasting Pits	546: SU 12, All Other Features	547: SU 14, Possible Structure with Interior Features	548: SU 14, Small Pits	549: SU 14, Possible Postholes	552: Surface Collection
Indeterminate utility ware	-	-	-	-	1	-	-	-
	-	-	-	-	0.8%	-	-	-
NRG Mudware	-	-	1	1	1	-	-	-
	-	-	2.4%	1.4%	0.8%	-	-	-
MRG Plain rim	1	-	2	1	1	-	-	-
	5.6%	-	4.8%	1.4%	0.8%	-	-	-
MRG Plain body	16	41	34	64	115	16	4	1
	88.9%	100.0%	81.0%	90.1%	94.3%	94.1%	66.7%	100.0%
MRG Unpainted undifferentiated	-	-	1	-	-	1	-	-
	-	-	2.4%	-	-	5.9%	-	-
MRG Mineral Paint (undiff)	-	-	-	-	-	-	1	-
	-	-	-	-	-	-	16.7%	-
San Marcial Black-on-white	-	-	3	1	1	-	-	-
	-	-	7.1%	1.4%	0.8%	-	-	-
Slipped Red over white paste (Tallahogan-like)	1	-	-	3	1	-	1	-
	5.6%	-	-	4.2%	0.8%	-	16.7%	-
Mogollon Red-on-brown	-	-	-	-	1	-	-	-
	-	-	-	-	0.8%	-	-	-
San Francisco Red	-	-	-	-	1	-	-	-
	-	-	-	-	0.8%	-	-	-
Alma Plain body	-	-	1	1	-	-	-	-
	-	-	2.4%	1.4%	-	-	-	-
Total	18	41	42	71	122	17	6	1
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NRG = Northern Rio Grande; MRG = Middle Rio Grande

Table 11.44. LA 265, SU 9, Ventilator Shaft and Tunnel for Structure 4, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Sandstone		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	16	66.7	2	8.3	1	4.2	-	-	2	8.3	-	-	-	-	3	12.5	24	8
Flake	94	39.8	28	11.9	7	3	42	18	65	27.5	-	-	-	-	-	-	236	79
Flake, Bifacial Thin	-	-	-	-	-	-	19	95	1	5	-	-	-	-	-	-	20	6
Flake from G S	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Core, Multiplatform	2	50	2	50	-	-	-	-	-	-	-	-	-	-	-	-	4	1
Flake, Utilized	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Flake, Marginal Retouch	-	-	3	100	-	-	-	-	-	-	-	-	-	-	-	-	3	1
Biface	-	-	-	-	-	-	2	67	1	33.3	-	-	-	-	-	-	3	1
Uniface	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	-	-	2	100	-	-	2	<1
Expedient handstone	-	-	-	-	-	-	-	-	1	50	1	50	-	-	-	-	2	<1
Cobble with pigment	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Total	112	37.6	35	11.7	9	3	64	22	72	24.2	1	0.3	2	0.7	3	1	298	100

Table 11.45. LA 265, SU 9, Upper Hearth, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
Flake	10	50.0	2	10.0	-	-	8	40.0	20	95.0
Flake, Bifacial Thin	-	-	-	-	1	100.0	-	-	1	4.0
Total	10	47.6	2	9.5	1	4.8	8	38.1	21	100.0

Table 11.46. LA 265, SU 9, All Other Features, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	25.0	2	50.0	1	25.0	-	-	-	-	4	14.0
Flake	10	43.5	3	13.0	-	-	4	17.4	6	26.1	23	85.0
Total	11	40.7	5	18.5	1	3.7	4	14.8	6	22.2	27	100.0

## STUDY UNIT 12

Study Unit 12 is a surface activity area immediately north of the Study Unit 13/Structure 13 Early Developmental pit structure (Fig. 11.2). Study Unit 12 contains several thermal features, bell-shaped pits, straight-walled pits, basin-shaped pits, and postholes. The study unit was in Area 2 on the east side of NM 22. It encompassed 520 sq m bounded by grids 440-480N, and 537-550E (Fig. 11.34).

### *Basin-Shaped, Straight-Walled, and Conical Thermal Features*

Feature 30 is an irregular oval, basin-shaped

thermal pit measuring 60-by-43-by-10 cm located 2 m south of Feature 31 containing a single stratum of dark gray ashy fill with ceramics, lithics, five pieces of fire-cracked rock, and four burned cobbles. The fire-cracked rock weighed 2.5 kg. No evidence of oxidation was noted on the base or sides of the pit.

Feature 48 is a basin-shaped thermal feature located 10 m southeast of Structure 13. The feature is 60-by-50-by-10 cm deep and filled with dark gray (10YR 3/3) sandy soil containing abundant charcoal and a few pieces of fire-cracked rock. The sides of the feature exhibited evidence of oxidation. A single sherd was the only artifact found in the fill.

Table 11.47. LA 265, SU 9 Features, Summary of Fauna

	Feature 17		Feature 54		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal	4	40.0%	-	-	4	33.3%
Medium to large mammal	-	-	1	50.0%	1	8.3%
Medium to large rodent	1	10.0%	-	-	1	8.3%
Desert cottontail	3	30.0%	-	-	3	25.0%
Medium artiodactyl	-	-	1	50.0%	1	8.3%
Mule deer	1	10.0%	-	-	1	8.3%
True toads	1	10.0%	-	-	1	8.3%
Group Total	10	100.0%	2	100.0%	12	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Burned	-	-	1	50.0%	1	8.3%
>75% complete	1	10.0%	-	-	1	8.3%
50-75% complete	1	10.0%	-	-	1	8.3%
25-50% complete	1	10.0%	-	-	1	8.3%
<25% complete	7	70.0%	2	100.0%	9	75.0%

Feature 217 is an oval, basin-shaped thermal pit located 50 cm south of Feature 211. Feature 224 is located directly adjacent, and was perhaps constructed partially within, the southwest side of Feature 217. Feature 217 measures 60-by-50 cm on the ground surface and is 20 cm deep. An upper stratum of dark brown (10YR 5/3) ashy sand 3 cm to 10 cm thick overlies a layer of burned cobbles. Beneath the cobbles is another stratum of sand 6 cm to 10 cm thick identical to Stratum 1. The cobble layer consists of 15 burned river cobbles weighing a total of 6 kg. Only two lithic artifacts and a single sherd were recovered from Stratum 1; no artifacts were found in Stratum 2. The bottom of the feature is distinctly oxidized.

Feature 221 is an oval, basin-shaped thermal pit containing burned cobbles located 4.1 m south of Feature 209. Feature 221 measures 50-by-45 cm in outline and is 35 cm deep. The upper fill consists of a 10 to 15-cm-thick lens of light brown (10YR 4/2) matrix containing only a few lithic artifacts, but no ceramics, bone, or rock. Below this was a stratum of burned rocks intermixed with dark gray soils containing charcoal. Thirty-six burned cobbles were stacked in the pit, weighing 16 kg. The sides and bottom of the feature were heavily oxidized.

Feature 245 is a basin-shaped thermal feature located 2.5 m southwest of Feature 217. The pit is an irregular oval measuring 118-by-70 cm

at the ground surface, and is 20 cm deep. Fill consists of a single strata of ashy sand (10YR 5/3) containing abundant charcoal, burned cobbles, lithic artifacts, ceramics, bone, and ground stone fragments. No evidence of oxidation was noted on the interior of the pit however.

Feature 209 is a straight-walled thermal feature located 1.35 m north of Feature 221. Feature 209 is oval in outline shape, measuring 60-by-50 cm at the ground surface, and is 30 cm deep. Fill consisted of an upper Stratum 1 containing 10YR 4/2 dark grayish brown ashy sand with pumice and charcoal flecking charcoal 2- to 10-cm deep, underlain by a 20- to 26-cm-thick deposit of 10YR 4/3 brown clayey loam with charcoal flecking. Although ceramics, lithics, and bone were recovered from the fill, artifacts were sparse and no fire-cracked or burned rocks were found. A few pieces of what appeared to be unfired clay pellets were present. The base of the feature had a distinct patch of oxidation.

Feature 214 is a conical thermal feature located 65 cm west of Feature 228. Feature 214 measures 65-by-57 cm at ground level, but constricts to a diameter of 34-by-26 cm at its basal depth of 42 cm. The very bottom of the feature is lined with a bed of 39 burned cobbles 18 cm thick, weighing 13 kg. Intermixed and directly above the cobbles were large pieces of charcoal, and the sides and bottom of the pit exhibited oxidization. The upper fill of the pit was a brown ashy sand (10YR 5/3)

containing no fire-cracked rock, a little charcoal, and only three ceramic fragments.

#### *Adobe-Collared Hearth*

Feature 225 is an adobe-collared hearth located immediately west of Structure 13. The feature is 40 cm in exterior diameter, with a central basin measuring 28-by-25 cm and 8 cm deep. Fill consists of a single stratum of gray ashy sand (10YR 4/2) with occasional flecks of charcoal. No artifacts were found in or nearby the hearth. The interior of the hearth and interior portions of the collar exhibit oxidation.

#### *Bell-Shaped Pits*

Feature 31 is a bell-shaped pit located 2 m north of Feature 30. Feature 32 probably originally served as a storage pit, then was filled with trash and finally used as a thermal feature. The pit measures 65 cm in diameter at the ground surface, then flares out to a diameter of 112 cm by 108 cm at its basal depth of 78 cm. The bottom of the pit was filled with a 10-cm-thick layer of adobe chunks (Stratum 4) that may represent material that originally lined the pit when it was being used for storage. Only two artifacts were found in this layer. Overlying this was a 35-cm-thick deposit of ash-stained dark brown to gray sandy loam midden fill (Stratum 3) containing substantial numbers of ceramics, lithics, bone, charcoal, and ground stone. The uppermost strata (Stratum 1 and 2) were somewhat disturbed by rodent activity, but consisted of dark ashy fill containing abundant burned cobbles (9 kg) and fire-cracked rock (11 kg). This 30-cm-thick deposit appears to represent a final use of the Feature 31 as a cooking pit.

Feature 229 is a bell-shaped pit located 2.1 m north of Feature 223. Feature 229 has a circular opening at ground level 20 cm in diameter, and bells out to a 25 cm diameter midway to its base at a depth of 20 cm. Fill is a dark gray brown silty sand, containing a single flake but no burned or fire-cracked rock. No evidence of oxidation was noted in the pit.

#### *Straight-Walled Pits*

Feature 49 is a straight-walled pit located 4 m southeast of Feature 48 measuring 170 cm by 130 cm at the ground surface and extending 82 cm deep. The pit is heavily disturbed by rodent activity, and actually dug on a slight diagonal from south to north. The base of the pit is 100 cm in diameter, and that dimension may more accurately reflect the original ground surface opening size. A 12-cm layer of sand (10YR 5/4) containing large chunks of calcium carbonate but no artifacts or charcoal lined the bottom of the pit (Stratum 2). The remainder of the upper fill was a relatively homogeneous midden deposit consisting of fine sandy loam (10YR 4/4) containing abundant ceramics, lithics, bone, shell, and charcoal. No evidence of oxidation of the pit walls or bottom was noted.

Feature 222 is an oval, straight-walled pit located directly north of the ventilator shaft for Structure 13, and 35 cm southwest of Feature 223. Feature 222 measures 40-by-25 cm at the ground surface, and is 30 cm deep. The western edge of the feature was exposed by a backhoe trench. Fill of the feature was a single stratum of light yellow brown sand containing traces of charcoal, three lithic artifacts, two pieces of bone, and no fire-cracked or burned rock. No evidence of oxidation was observed on the walls or bottom of the pit.

Feature 228 is an oval straight-walled pit located 65 cm northwest of Feature 214, which measures 30 cm by 21 cm in outline and is 32 cm deep. The feature is filled with a single stratum of ashy yellow brown (10YR 4/2) sand with a few small pieces of charcoal. No artifacts or burned rock was present in the fill, and no evidence of oxidation was noted on the sides or bottom of the feature.

#### *Basin-Shaped Pits*

Feature 176 is an oval, basin-shaped pit located 1.1 m northeast of Feature 30. The feature was exposed in the profile of a backhoe trench and measures 60 cm by 45 cm at the surface and is 20 cm deep. Fill was a single layer of mottled brown (10YR 3/3) sandy silt with small pieces

of charcoal and charcoal staining, but containing no fire-cracked rock and only two ceramic fragments. No evidence of oxidation of the bottom or sides of the pit was observed.

Feature 177 is an oval, basin-shaped pit located 10 m north of Structure 13 and 3.5 m northeast of Feature 215. The feature measures 107 cm by 90 cm at the surface, and is between 4 cm and 15 cm deep, with the bottom sloping from north to south. Fill consisted of a single stratum of dark yellow brown (10YR 3/6) sandy silt with charcoal staining and a few small pieces of charcoal. Only two ceramic fragments, two pieces of debitage, and a single mano fragment were found in the fill. No fire-cracked or burned rock, or evidence of oxidation, was noted.

Feature 211 is a small circular basin-shaped pit located 1.15 m north of Feature 216 that is 13 cm in diameter and 7 cm deep. The pit is filled with dark yellow brown (10YR 4/4) sand, which contained no artifacts or burned rock.

Feature 213 is a basin-shaped thermal feature located 1.65 m due east of Feature 31. Feature 213 is oval in outline shape, measuring 65 cm by 50 cm at the ground surface, by 25 cm deep. Fill consists of a single stratum of dark gray brown (10YR 4/2) sandy silt with pieces of charcoal, very few ceramics and lithics, and a few pieces of fire-cracked rock (1 kg total). Patches of oxidation were observed on the sides and bottom of the feature.

Feature 215 is an oval, basin-shaped pit located 55 cm north of Feature 208 measuring 68-by-46 cm and the ground surface. The pit was 20 cm deep and contained a single stratum of dark grayish brown (10YR 4/2) silty loam with charcoal flecking. Six ceramic fragments, 2 lithic artifacts, and three pieces of fire-cracked rock were recovered from the fill. No evidence of oxidization was observed on the sides or bottom of the pit. The pit was heavily rodent disturbed.

Feature 216 is a small, circular, basin-shaped pit located 60 cm northwest of Feature 30. The feature is 13 cm in diameter, 12 cm deep, and filled with a dark gray brown (10YR 4/2) sandy loam containing a single sherd and a cobble with a ground surface. The feature has considerable rodent disturbance.

Feature 223 is an oval, basin-shaped pit located 35 cm northeast of Feature 222. It measures 56 cm by 30 cm at the ground surface, is 23 cm deep, and contains a single stratum of light yellow brown sand containing traces of charcoal, but no artifacts or burned rock. The feature was rodent disturbed. No oxidation was observed on the pit walls or floor.

Feature 226 is an oval, basin-shaped pit located 50 cm north of Feature 217, measuring 33 cm by 28 cm at ground surface and 12 cm deep. It is filled with a single stratum of light brown sandy clay exhibiting charcoal flecks but no artifacts or burned rock. No evidence of oxidation was noted on the sides or bottom of the pit. The feature is rodent disturbed.

Feature 230 is a circular, basin-shaped pit located 60 cm northwest of Feature 230. Feature 230 is 24 cm in diameter, and 20 cm deep. It is filled with yellow brown (10YR 4/3) ashy sand, containing one sherd, one lithic artifact, and a piece of burned adobe. Three pieces of fire-cracked rock were also recovered from the fill, but no evidence of oxidation was observed on the interior of the feature.

#### *Postholes*

Feature 208 is a probable posthole located 50 cm south of Feature 215. The feature is straight sided, nearly circular (21–22 cm in diameter) and 14 cm deep. Upper fill of the feature consisted of 10YR 4/2 dark grayish brown silty loam with charcoal flecking (10–12 cm thick). The bottom of the posthole contained a 1 cm to 3 cm layer of fill much the same, but mottled with light brown clayey loam. A mano fragment and a quartzite cobble were found in the upper fill.

Feature 224 is a straight-walled pit that may be a posthole, located directly adjacent to and partially intersecting the southwest side of the Feature 217 roasting pit. Feature 224 is oval in outline shape, measures 35-by-25 cm at the surface, and is 31 cm deep. Fill was a single stratum of light brown (10YR 5/3) sand containing charcoal flecks and pumice grains. Only a single sherd was found in the fill, and no evidence of oxidization was noted. The pit

seems to have been dug partially into Feature 217 and could well represent a posthole.

Feature 239 is a posthole immediately southwest of Feature 214. The posthole is circular, 10 cm in diameter, and 17 cm deep with straight sides. Fill consists of a single stratum of ashy yellow brown (10YR 4/2) sand with a few small pieces of charcoal. No artifacts or burned rock were found in the fill.

### *Artifacts*

A low number of artifacts were analyzed from Study Unit 12 contexts. In all, 113 sherds, 177 lithic artifacts, and 23 animal bones were examined. Artifact data by hearths/roasting pits and all other features are presented in Tables 11.43, 11.48, 11.49, and 11.50. Results for each artifact class are briefly summarized below.

**Ceramics.** Of the 113 sherds analyzed from Study Unit 12 contexts, 81 to 90 percent were Middle Rio Grande Plain gray wares with low frequencies of Tallahogan-like and Alma Plain (Table 11.43). The majority of sherds are from jar neck and body portions with a few bowl sherds represented. Twelve percent of the sherds exhibit evidence of cooking wear. These sherds appear to be from domestic activities. Their discard into features may be incidental or natural following abatement of feature use.

**Lithic Artifacts.** Thirty-one lithic artifacts were recovered from hearths and roasting pits in Study Unit 12 (Table 11.49). Chalcedony (39 percent) and nonvesicular igneous materials (36 percent) compose the majority of the assemblage. Low frequencies of chert ( $n = 5$ ) and Jemez obsidian ( $n = 3$ ) were also recovered. The assemblage indicates an emphasis on both early and later stages of secondary core reduction. Seventy percent of the flakes with platforms are either single-faceted (63 percent) or multifaceted (25 percent). Two multiplatform chalcedony cores and a hammerstone were associated with the provenience. Utilized flakes (80 percent) and unutilized small angular debris (3 percent) made up the majority of the assem-

blage. A single, marginally retouched flake exhibited three functional edges—two of these exhibited unidirectional scraping wear typical of scraping on a hard media like bone or wood.

One hundred and forty-four lithic artifacts were recovered from all other features in Study Unit 12 (Table 11.50). The majority of the assemblage consisted of chalcedony (46 percent), nonvesicular igneous materials (29 percent), and Jemez obsidian (16 percent). Material categories containing fewer artifacts are chert ( $n = 11$ ), quartzite ( $n = 5$ ), nonvesicular igneous materials ( $n = 1$ ) and a black opaque obsidian flake ( $n = 1$ ) that probably originates in the Grants (Mount Taylor) area. The assemblage indicates an emphasis on later stages of secondary core reduction—76 percent of the whole flakes lack dorsal cortex. Bifacial tool manufacture is indicated by three bifacial thinning flakes manufactured from Jemez obsidian ( $n = 2$ ) and Grants obsidian ( $n = 1$ ). Unutilized flakes (82 percent) and unutilized small angular debris (9 percent) make up the majority of the assemblage. Both expedient and formal tools were recovered from this provenience. Two utilized flakes exhibit bidirectional wear typical of cutting on hard media like bone or wood—one flake had two use edges. A third expedient flake tool exhibits unidirectional wear consistent with scraping on a hard media like bone or wood. Three broken biface fragments lacked evidence of complete functional edges and may represent manufacturing failures. They were all manufactured from Jemez obsidian. A complete Jemez obsidian projectile point was also recovered. Two indeterminate manos are indicated by fragments of vesicular basalt and coarse-grained rhyolite.

**Fauna.** Fauna were analyzed from Features 31, 49, and 245. Low frequencies prevent significant interpretation (Table 11.48). Species distribution is similar to refuse disposal patterns observed for other extramural feature areas. Low frequencies may reflect short occupation duration or recovery bias. Only six of the eleven Study Unit 12 proveniences that yielded animal bone were analyzed.

Table 11.48. LA 265, SU 11 and SU 12, Summary of Fauna

	SU 11, Feature 29		SU 12, Feature 31		SU 12, Feature 49		SU 12, Feature 245	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	3	23.1%	1	50.0%	2	25.0%
Medium to large mammal	-	-	4	30.8%	-	-	1	12.5%
Gunnison's prairie dog	-	-	-	-	-	-	1	12.5%
Medium to large rodent	-	-	-	-	-	-	1	12.5%
Desert cottontail	1	33.3%	5	38.5%	-	-	-	-
Black-tailed jack rabbit	2	66.7%	1	7.7%	-	-	1	12.5%
Medium artiodactyl	-	-	-	-	1	50.0%	-	-
Mule deer	-	-	-	-	-	-	1	12.5%
Plains or Woodhouse's toad	-	-	-	-	-	-	1	12.5%
Total	3	100.0%	13	100.0%	2	100.0%	8	100.0%
Immature (1/2-2/3 grown)	-	-	2	15.4%	-	-	-	-
Burned	-	-	1	7.7%	-	-	1	12.5%
Complete	-	-	1	7.7%	-	-	-	-
>75% complete	1	33.3%	-	-	-	-	-	-
25-50% complete	-	-	1	7.7%	1	50.0%	3	37.5%
<25% complete	2	66.7%	11	84.6%	1	50.0%	5	62.5%

Table 11.49. LA 265, SU 12 Hearths and Roasting Pits, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
	Angular Debris	1	100	-	-	-	-	-	-	1
Flake	9	36	3	12	3	12	10	40	25	80
Flake from Hammerstone	-	-	1	100	-	-	-	-	1	3
Core, Multiplatform	2	100	-	-	-	-	-	-	2	6
Hammerstone	-	-	1	100	-	-	-	-	1	3
Flake, Marginal Retouch	-	-	-	-	-	-	1	100	1	3
Total	12	38.7	5	16.1	3	9.7	11	35.5	31	100

Table 11.50. LA 265, SU 12, All Other Features, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Non- local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	7	53.8	2	15.4	-	-	1	7.7	3	23.1	-	-	-	-	13	9.0
Flake	58	48.7	9	7.6	5	4.2	8	6.7	38	31.9	-	-	1	0.8	119	82.0
Flake, Bifacial Thin	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	2.0
Flake, Utilized	1	33.3	-	-	-	-	2	66.7	-	-	-	-	-	-	3	2.0
Projectile Point	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	1.0
Biface	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	1.0
Mano, Unknown	-	-	-	-	-	-	-	-	1	50.0	1	50.0	-	-	2	1.0
Total	66	45.8	11	7.6	5	3.5	18	12.5	42	29.2	1	0.7	1	0.7	144	100.0



## *Summary*

Study Unit 12 was a surface activity area immediately north of Structure 13. Study Unit 12 contained 25 pit features including 9 thermal features, 2 bell-shaped pits, 4 straight-walled pits, 8 basin-shaped pits, and 2 post-holes. Twenty features cluster within the central 75 sq m. One feature, Feature 177, is isolated to the north of the main cluster, and four features, Features 225, 222, 223, and 229, are located to the south. The majority of the features fall into the large class with a maximum dimension of greater than 50 cm. Most of the large features have a 50 to 75 cm maximum dimension. None of the features fall into the very large class, which contrasts with the other extramural activity areas, such as Study Unit 2 or Study Unit 3. Only one moderate-sized bell-shaped storage feature was excavated and the majority of the pits are undifferentiated straight-walled and basin-shaped varieties. Study Unit 12 does have a higher percentage of thermal features than other extramural activity areas and they are relatively small-scale suggesting household-level processing.

## STUDY UNIT 13/STRUCTURE 13

Study Unit 13 is an Early Developmental pit structure (Structure 13) in Area 2 (Figs. 11.1, 11.36) that appears to be roughly contemporary with the two pit structures on the westside of the highway in Area 1 (Structure 1 and Structure 4). Two radiocarbon samples produced date ranges of AD 640–770 and AD 680–880, respectively. An archaeomagnetic sample (Sample 1145) was collected from the adobe collar of the hearth (Feature 128), and yielded a pre-AD 800 date range. The analyzed ceramics were also dated to the Early Developmental period.

## *Excavation Procedure*

A small exposure of carbon-stained sand was observed in the west profile of a north-south trench that had been excavated along the 541E gridline parallel to the highway. A shallow

perpendicular trench was extended west along the 462N gridline from 541E to 535E. Carbon-stained eolian sand overlying a stratum of highly mottled charcoal-laden fill was exposed from 536–540E. At 4+ m long, it appeared to be structure fill. The areas north and south of this trench were shovel skimmed to the top of the Bk stratum, exposing the extent of the structure fill. The east-west backhoe trench was deepened by hand until floor was reached. This fill was not screened. A profile of the exposed structure fill was drawn and photographs taken. Pollen and flotation samples were taken from each stratum.

Four 1-by-1-m control units were then excavated through the fill, one in each quadrant. The northern units, at 463N/537 and 539E, were excavated in arbitrary 10-cm levels. The southern units, at 461N/537E and 461N/539E, were excavated in three natural strata. These were excavated to floor, and all fill was screened. Backhoe and shovel excavation removed and discarded the remainder of the fill to about 10 cm above the floor contact. The structure was then divided into quadrants that were excavated to floor. This stratum of fill was screened, and pollen and flotation samples were taken from each quadrant.

After the fill was removed, the floor features, filled with carbon-stained sands, stood out well against the grayish floor. Everything that appeared to be a feature was mapped with plane table and alidade and given a feature number, although excavation revealed that several were non-cultural.

## *Stratigraphy*

Structure fill consisted of three basic strata, which reflect different stages of infilling after the structure was abandoned (Figs. 11.37). The uppermost Stratum 1 consisted of a 1.06-m-thick lens of homogeneous carbon-stained eolian sand reflecting final infilling of the structure depression after final site abandonment. Below that (measurements reflect depths below surface at the center of the structure) were lenses of sand and clay laminations,



Figure 11.36. Structure 13, looking north.

interbedded with layers of cultural material including charcoal, artifacts, and some adobe chunks (Fig. 11.38). These Stratum 2 lenses are 52 cm thick and clearly reflect an intermittent sequence of use of the structure depression as a trash disposal area by nearby site occupants over an indeterminate period of time. Stratum 3 consisted of sand and clay with large chunks of charcoal, adobe, and wall melt reflecting the dismantling of the roof itself and initial collapse of the upper walls. Stratum 3.2 was a 45-cm-high mound of eolian sand containing some cultural material lying directly on the

floor just west of the central fire pit. This deposit appears to reflect an accumulation of sediments and some trash below the roof entrance, indicating the structure stood open for some time after it fell into disuse, but prior to its roof being dismantled. This mound and the remainder of the floor were then covered to a height of 60 cm above floor by Strata 3, 3.1, and 3.3. These strata represent varying amounts of adobe roof cap material, wall adobe, and some midden debris remaining from dismantling the roof by removal of the support posts and cross beams. Following this

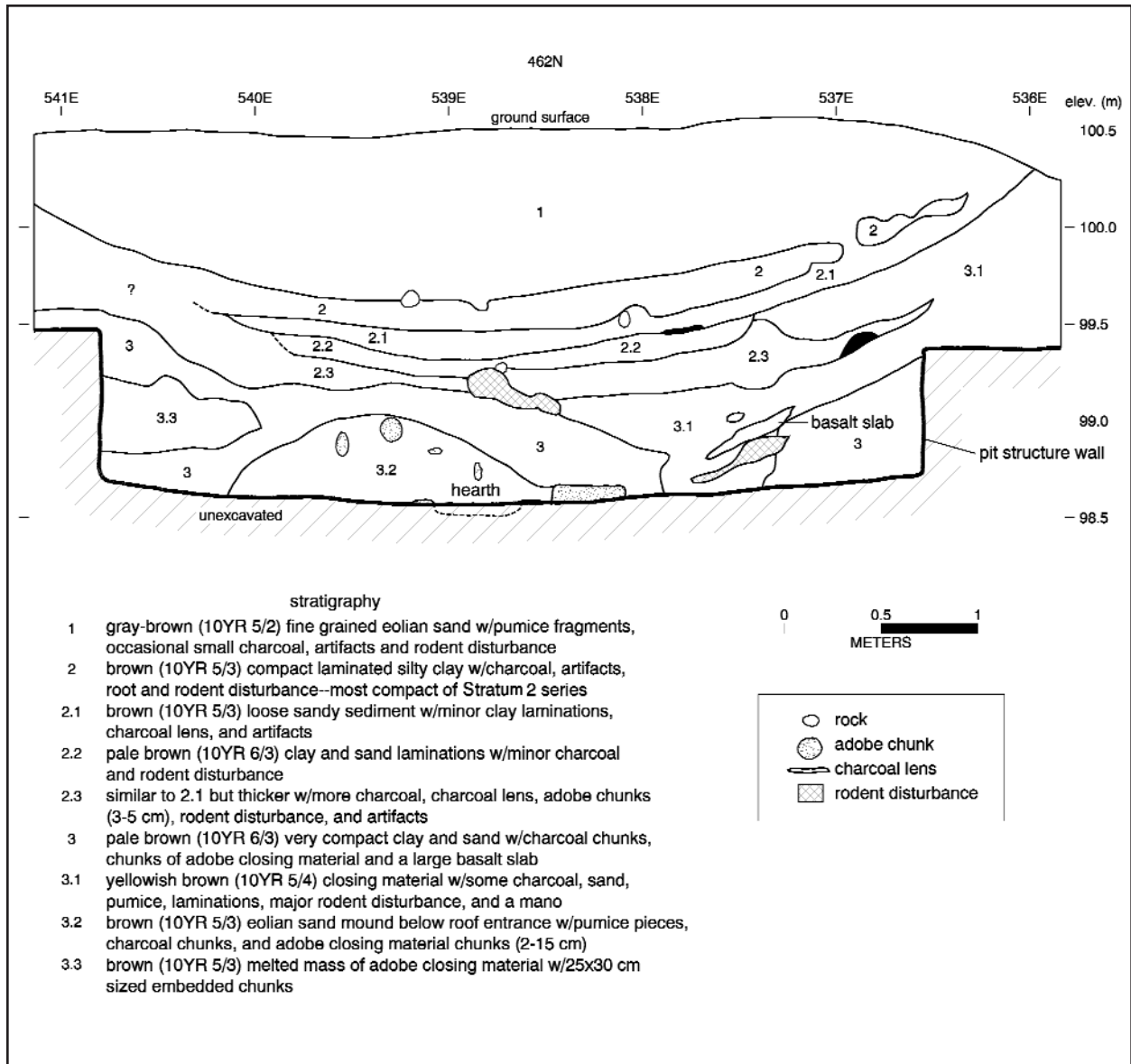


Figure 11.37. Structure 13, stratigraphy.

dismantling episode, Strata 2, 2.1, 2.2, and 2.3 clearly depict the episodic use of the depression as a trash repository.

Three dog burials (Features 50, 55, and 64) were encountered in the structure fill. Feature 50, a semi-articulated partial skeleton, was found along the northeast wall, about 1 m above the structure floor in Stratum 2. Feature 55 was more complete and articulated (Fig. 11.39) and was located south of Feature 50, only 20 cm above the floor. Neither of these burials appeared to have been placed in a prepared pit, but Feature 55 was interred lying on

its left side with the skull oriented to the west. Feature 64 was a disarticulated partial skeleton just above the floor along the east wall in Stratum 3. It appeared to have been placed in a pit that had been dug into the Stratum 3 fill, and extended down into the floor of the structure. The base of the pit, containing cobbles and a core, was documented as a structure floor feature (Feature 138), but was clearly related to interment of the dog (Feature 64). No grave offerings were associated with any of the dog burials.



Figure 11.38. Structure 13, stratigraphy facing south.

#### *Structure Description*

Structure 13 was roughly circular, just over 4 m in diameter, and 1.5 m deep. It contained 22 internal features, including a central fire hearth, two cobble-filled "warming" pits, four main structural support postholes, scattered smaller postholes, and a number of additional pits of varying size and indeterminate function (Fig. 11.36). An adult human burial was recovered from a large subfloor pit near the west wall of the structure, and three intrusive dog burials were recovered from structure fill. As with the other two pithouses excavated at LA 265, Structure 13 was abandoned, the roof appears to have been intentionally dismantled, and the resultant structure pit was filled with interbedded alluvial, eolian, and cultural deposits. A low mound of wind-blown sand on the floor of the structure immediately west of the fire hearth was covered with a thick lens of roof cap closing material that indicates the structure was abandoned and the roof hatch left open for a short interval before the roof

was dismantled and the superstructure removed from the pit. Evidence of this structure remodeling and stratigraphic superpositioning is seen throughout the site during the Early Developmental occupation of LA 265.

Many radiocarbon samples were collected, and two small samples were selected for AMS dating. Sample 1211-265, 0.08 g of *Zea* corn cob parts, was collected from the middle of the structure fill (Stratum 2), and Sample 1471-265, 0.04 g of *Zea* corn kernels, was collected from the structure hearth (Feature 128). These samples produced date ranges of AD 640-770 and AD 680-880, respectively. An archaeomagnetic sample (Sample 1145) was collected from the adobe collar of the hearth (Feature 128), and yielded a pre-AD 800 date range. The analyzed ceramics were also dated to the Early Developmental period.

No lateral entrance was identified during excavation, but the mound of eolian fill lying on the floor directly west of the fire pit indicates that a roof hatch entry probably existed above the fire pit area.

The lower 1 m of wall was intact, but the

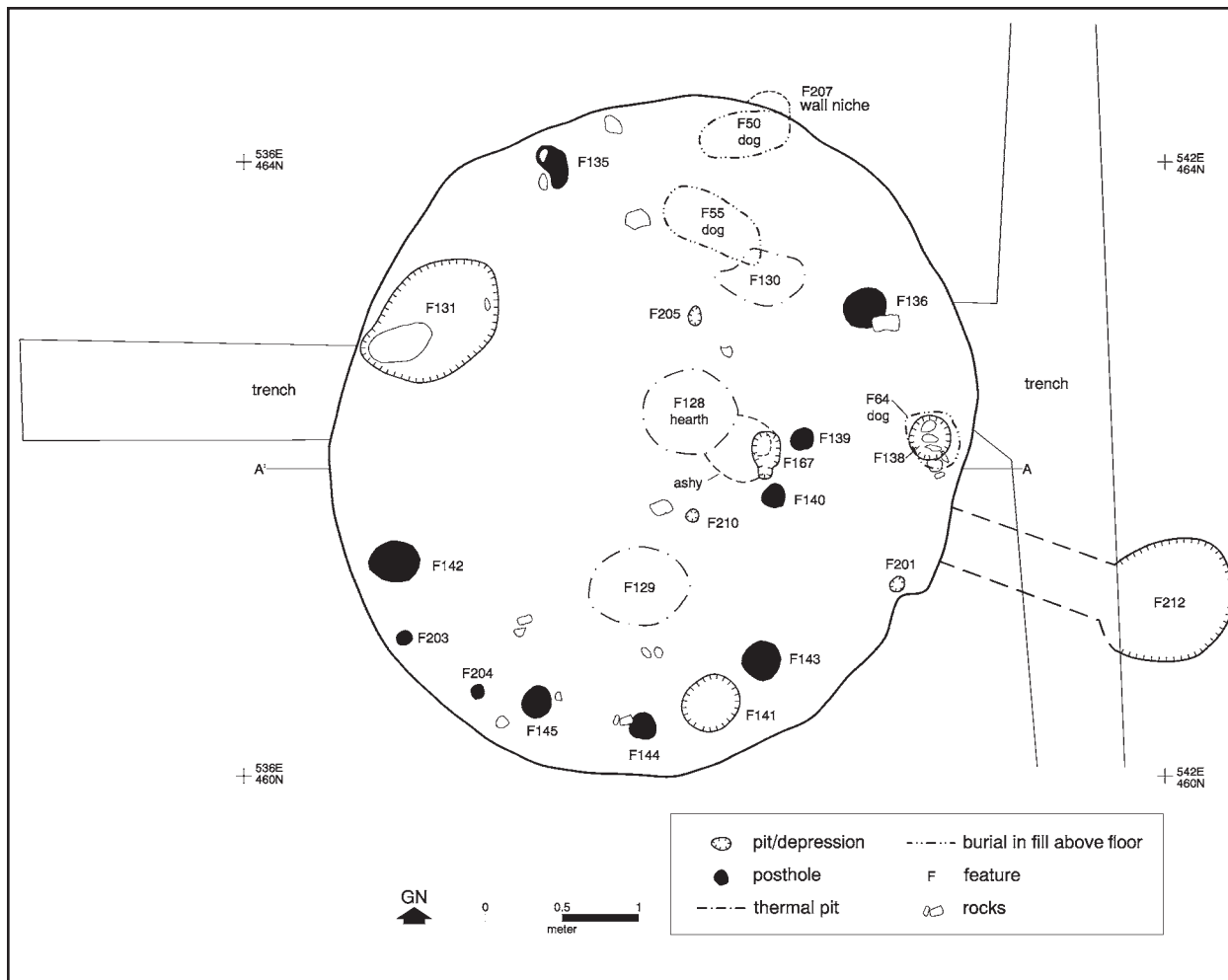


Figure 11.39. Structure 13, plan view.

upper walls had melted. The intact walls were mostly vertical and smooth, with traces of plaster. The fill separated cleanly from the intact walls. Above the intact walls, excavation was halted when the contact between the structure fill and the surrounding sterile Bk stratum was encountered.

Feature 207 was a niche in the north wall. It measured 33 cm tall by 26 cm wide, and its base was 50 cm above the floor. The back of the niche was heavily rodent disturbed, so its depth is unknown. A large flat slab had been fitted into the opening and plastered over, with plaster remaining on its right side. The upper one-half of the fill was screened, and the bottom half was collected as flotation sample. A pollen sample was also scraped from the floor of the niche. Bone, charcoal, a ground stone fragment, and a

small piece of turquoise were recovered.

The only roofing material recovered was unburned adobe chunks in the post-occupation fill. The major structural components appear to have been salvaged, as no large wood was encountered.

#### Floor Features

Floor features found in Study Unit 13 included the ventilator system and the primary fire pit/ash pit/deflector complex, two ancillary thermal features, eight postholes, three storage pits, and three pot rests (Fig. 11.39).

**Hearth/Ash Pit/Deflector Complex.** Feature 128 is the primary hearth and is located near the center of the structure (Fig. 11.39). The ash

pit (Feature 167) and deflector postholes (Features 139 and 140) were located adjacent and to the east, in line with the ventilator tunnel. An adobe collar mostly encircled the hearth; its northwest portion was missing or eroded. The inside diameter was 46 cm, the outer diameter was 66 cm, and the maximum depth was 14 cm. Bisection of the intact adobe revealed remodeling; layers of oxidized adobe had been built up. The hearth fill consisted of 7 cm of charcoal-laden ash and sand overlying 4–6 cm of highly oxidized sand. The base of the hearth was irregular and unoxidized, possibly due to repeated cleaning. A thin flat sandstone slab (21-by-12-by-2 cm) was found nestled on the top of the oxidized sand, mostly in the southwest half of the feature. It may have been utilized as a heat reflector or cooking slab. It had been broken from a larger slab, possibly the deflector, and its only exterior edge had been shaped. Grinding or use wear was exhibited on one face, while the other had a 10.5-by-7 cm oval stain. This did not appear to be a natural discoloration of the sandstone, but rather a stain caused by animal fat or some other substance having been placed on the hot slab.

The adjacent ash pit (Feature 167) was an amorphous ash stain overlying an irregularly shaped pit between the deflector postholes and the hearth. Fill consisted of packed ash with moderately large pieces of charcoal. The deflector support posts (Feature 139 and 140) were located directly east of the ash pit, situated 40 cm apart along an axis perpendicular to the ventilator-fire pit alignment.

**Ancillary Thermal Features.** Features 129 and 130 were shallow, oval, basin-shaped pits containing burned cobbles and fire-cracked rock. The pits were both 60-by-50 cm in length and width, and only 10–13 cm deep. The walls and bases of the pits were oxidized, indicating their use as thermal features. The pits were situated to the north and south of the central fire pit, roughly midway between the fire pit and the structure walls. Similar features in a similar floor arrangement seem characteristic of Early Developmental pithouses for this area.

**Pits.** Feature 131 was a large pit located against the wall in the northwestern quadrant of the structure which contained a human burial. The individual was female, 50+ years old, and was interred in a flexed position on her back with the skull oriented to the southwest. The skeleton was situated below the structure floor level in the pit and a metate was inverted over the skull. A portion of the pit may have been plastered over a floor level, indicating the structure may have been in use after the burial had occurred. Most of the burial was located in the northwest one-half of the pit. The pit itself appeared to have been a large bell-shaped storage pit (with 112-by-92 cm dimensions at its opening, flaring to 132 cm wide at a depth of 112 cm below floor), which was at least partially trash-filled at the time of interment. The fill matrix beneath and covering the burial contained charcoal flecking, lithics, ceramics, and a tiny fragment of turquoise. Two bone awls were recovered from the lower fill underneath the burial, and together with the metate covering the skull, may have been grave offerings associated with the burial itself.

Feature 138 is a shallow oval pit located to the north of the ventilator tunnel opening



Figure 11.40. Structure 13, Feature 55, dog burial, in structure fill.

along the east wall of the structure. This pit is apparently the base of a deeper pit, which originated from fill levels above the floor of the structure, and was excavated to hold a dog burial (Feature 64).

Feature 141 was a bell-shaped storage pit located near the wall in the southeast quadrant of the structure, measuring 45 cm in diameter at its floor level opening, and expanding to 60 cm in diameter at a depth of 40 cm below floor level. The pit was filled with trash, including two bone awls, ceramic fragments, lithic debitage, shell, and charcoal.

**Pot Rests.** Features 201, 205, and 210 were shallow, basin-shaped depressions interpreted as pot rests. These features were nearly circular in outline, ranged from 7–10 cm in diameter and were 2–3 cm deep. Features 205 and 210 were situated on either side of the central fire pit, while Feature 201 was located directly south of the ventilator tunnel opening along the east wall of the structure.

**Postholes.** Features 135, 136, 142, and 143 were the main roof support posts, one located in each quadrant near the structure walls. These ranged in maximum diameter at floor level from 20 to 46 cm, were between 15 and 12 cm in diameter at their bases, and reached depths of 23 to 46 cm. Four additional postholes were all located near the wall in the south half of the structure. These are smaller in diameter (8–20 cm) and of varying depths (4.5–59 cm), and may have served as secondary roof supports. Features 144 and 145, along the south wall and Features 203 and 204 along the southwest wall, appear to be associated pairs.

**Ventilator Shaft.** Feature 212 included both the vertical ventilator shaft and the horizontal tunnel connecting it to the structure. The original north-south backhoe trench had impacted the west side of the shaft and the top of the tunnel. The remaining portion of the shaft was 84 cm across and probably had been circular. Its walls were irregular but generally vertical, and the base was relatively flat. It reached a depth

of 96 cm from its origination at the top of the Bk stratum. The base of the shaft was much higher than the floor of the structure. The tunnel opening measured 46 cm tall, 48 cm wide, and extended 1.2 m southeast to join the shaft, gaining 20 cm in elevation over the course of its run. It then had a 14 cm step up to the base of the shaft. Lithics, ceramics, bone, and unmodified cobbles (4 kg) were recovered from the tunnel. Lithics, ceramics, bone, ground stone, shell, and a chert knife were recovered from the shaft.

#### *Abandonment*

Abandonment was apparently orderly, possibly at the time of the interment of the Feature 131 burial. The presence of Stratum 3.2 (see profile), a mound of eolian sand on the structure floor, suggested that the roof was intact for a period of time after abandonment. At some later time, the superstructure was dismantled, and the resultant open depression served intermittently as a midden deposit locale for the site inhabitants until the site was abandoned. The structure had not burned.

#### *Artifacts*

Low artifact frequencies were recovered from all contexts within Structure 13: only 158 sherds, 64 animal bones, and 409 lithic artifacts. Artifact class distributions are provided in Tables 11.51 to 11.59. Brief summaries by context are presented below.

**Ceramics.** Table 11.51 shows that except for the upper fill and subfloor human burial, the predominant pottery type is Middle Rio Grande Plain making up 82 to 93 percent. Nonlocal ceramics are rare to absent with only Tallahogan-like represented in the roof fall and structure floor. This is contrast to most LA 265 contexts where Mogollon region wares consistently occur in low frequencies. This could be a phenomenon of sampling or it may reflect a temporal trend in the ceramic distribution with the assemblage within Structure 13 represent-

ing late developments in the LA 265 occupation sequence. Vessel form variety is limited, and jars and bowls are the most common. One pinch pot bowl was recovered from the structure floor. Contexts with more than 10 sherds have fewer than 9 percent of the sherds exhibiting wear associated with cooking. Overall, the assemblage shows a very limited focus on domestic activities.

**Lithic Artifacts.** One hundred and twenty-five lithic artifacts were recovered from the upper fill in Structure 13 (Table 11.52). The majority of artifacts were manufactured from chalcedony (41 percent), nonvesicular igneous materials (39 percent), and chert (12 percent). Low frequencies of Jemez obsidian ( $n = 8$ ), quartzite ( $n = 1$ ), and "other" local material ( $n = 1$ ) were also represented. The assemblage indicates an emphasis on both early and later stages of secondary core reduction within chalcedony and nonvesicular igneous material categories. No evidence of primary decortication or tertiary tool manufacture occurred within these two material categories. A single obsidian bifacial thinning flake provides the only evidence of formal tool manufacture. Also recovered were two multiplatform cores, one made from chert and the other from nonvesicular igneous material, and a tested rock.

Unutilized flakes (80 percent) and unutilized small angular debris (12 percent) made up the majority of the assemblage. One formal tool, a mano fragment, and four expedient tools were recovered from the upper fill. Expedient tools include three marginally retouched fragments manufactured from chalcedony, chert, and nonvesicular igneous material. With the exception of the chert tool, marginal retouch is unidirectional and wear is typical of scraping on hard media like bone or wood. The chalcedony tool appears to have been utilized, broken, and discarded as the functional edge is incomplete. The tool manufactured from nonvesicular igneous material exhibits a complete functional edge indicating it was probably utilized and discarded. The chert tool fragment exhibits bidirectional marginal retouch but lacks evidence of use. The fourth

expedient tool is a utilized flake that was manufactured from nonvesicular igneous materials and which exhibits unidirectional wear also indicating scraping on a hard medium. A complete obsidian uniface exhibited unidirectional wear typical of scraping on hard media. A single indeterminate mano fragment manufactured from fine-grained rhyolite was recovered.

Twenty-six lithic artifacts were recovered from the middle fill in Structure 13 (Table 11.53). Although the assemblage is small it provides some basic information about material selection, reduction, and tool manufacture. The majority of the assemblage was composed of chalcedony (50 percent,  $n = 13$ ) and chert (31 percent,  $n = 8$ ). Other material categories represented are Jemez obsidian ( $n = 3$ ), nonvesicular igneous material ( $n = 1$ ), and "other" local material ( $n = 1$ ). The assemblage indicates an emphasis on later stages of secondary reduction; eight of nine whole flakes lack dorsal cortex. The debitage exhibits no evidence of primary reduction or formal tool manufacture.

Unutilized flakes (73 percent) and unutilized small angular debris (11 percent) composed the majority of the assemblage. Two projectile points and a utilized flake were also recovered. The flake tool exhibited bidirectional wear typically resulting from cutting on hard media like bone or wood. It is likely the tool was used and discarded.

Fifty-two lithic artifacts were recovered from the roof fall in Structure 13 (Table 11.54). Chalcedony (60 percent) and nonvesicular igneous materials (19 percent) made up the majority of the assemblage. Other material categories represented are chert ( $n = 9$ ) and Jemez obsidian ( $n = 2$ ). Seventy-three percent of the whole flakes lack dorsal cortex indicating an emphasis on later stages of secondary core reduction. Whole flakes with partial dorsal cortex make up 21 percent of the whole flakes indicating that earlier stages of secondary reduction are also evident. Single-facet platforms (31 percent,  $n = 8$ ), often typical of later stages of secondary core reduction, were equally represented by flakes with cortical platforms (31 percent,  $n = 8$ ). These platforms



Table 11.51. LA 265, Structure 13 Ceramic Type Distributions

	500: None Assigned	513: SU 13, Upper Fill	515: SU 13, Roof Fall	516: SU 13, Structure Floor Contact	517: SU 13, Vent Shaft Fill	518: SU 13, Human Burial, Subfloor	520: SU 13, All Floor Features	Total
NRG Mudware	-	1 5.0%	-	1 2.9%	1 3.8%	2 50.0%	-	5 2.9%
MRG Plain rim	-	-	2 3.1%	-	1 3.8%	-	-	3 1.8%
MRG Plain body	11 91.7%	5 25.0%	59 90.8%	29 82.9%	24 92.3%	2 50.0%	8 100.0%	138 81.2%
MRG Unfired Plain Grayware	-	14 70.0%	-	-	-	-	-	14 8.2%
MRG Unpainted undifferentiated	-	-	1 1.5%	-	-	-	-	1 0.6%
MRG Mineral Paint (undiff)	-	-	1 1.5%	-	-	-	-	1 0.6%
San Marcial Black-on-white	1 8.3%	-	1 1.5%	2 5.7%	-	-	-	4 2.4%
WMR Slipped Red over white paste (Tallahogan-like)	-	-	1 1.5%	3 8.6%	-	-	-	4 2.4%
	12	20	65	35	26	4	8	170

NRG = Northern Rio Grande; MRG = Middle Rio Grande; WMR = White Mountain Redware

Table 11.52. LA 265, Structure 13, Upper Fill

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	7	46.7	2	13.3	-	-	1	6.7	5	33.3	-	-	15	12
Flake	42	42.0	11	11.0	1	1.0	5	5.0	40	40.0	1	1.0	100	80
Flake, Bifacial Thin	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	-	-	1	50.0	-	-	-	-	1	50.0	-	-	2	1
Flake, Utilized	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Flake, Marginal Retouch	1	33.3	1	33.3	-	-	-	-	1	33.3	-	-	3	2
Uniface	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Mano, Unknown	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	51	40.8	15	12.0	1	0.8	8	6.4	49	39.2	1	0.8	125	100

Table 11.53. LA 265, Structure 13, Middle Fill

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	66.7	1	33.3	-	-	-	-	-	-	3	11.0
Flake	9	47.4	7	36.8	-	-	3	15.8	-	-	19	73.0
Hammerstone	-	-	-	-	-	-	-	-	1	100.0	1	3.0
Flake, Utilized	1	100.0	-	-	-	-	-	-	-	-	1	3.0
Projectile Point	1	50.0	-	-	1	50.0	-	-	-	-	2	7.0
Total	13	50.0	8	30.8	1	3.8	3	11.5	1	3.8	26	100.0

Table 11.54. LA 265, Structure 13, Roof Fall

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
	Angular Debris	2	50.0	2	50.0	-	-	-	-	4
Flake	28	68.3	6	14.6	1	2.4	6	14.6	41	78
Core, Multiplatform	-	-	1	100.0	-	-	-	-	1	1
Core, Single Platform	-	-	-	-	-	-	1	100.0	1	1
Flake, Utilized	-	-	-	-	-	-	1	100.0	1	1
Flake, Marginal Retouch	1	100.0	-	-	-	-	-	-	1	1
Projectile Point	-	-	-	-	1	100.0	-	-	1	1
Metate, Unknown	-	-	-	-	-	-	1	100.0	1	1
Hoe	-	-	-	-	-	-	1	100.0	1	1
Total	31	59.6	9	17.3	2	3.8	10	19.2	52	100

are associated with both single-platform and multiplatform core reduction. Of two cores recovered from the provenience, one was single-platform and the other multiplatform.

Unutilized flakes and unutilized small angular debris made up the majority of the assemblage. Two expedient tools and a formal tool were recovered from the provenience. A marginally retouched chalcedony flake exhibits unidirectional retouch but lacks evidence of utilization. The functional edge is 50 degrees indicating the tool was probably manufactured for scraping activities. A utilized flake tool manufactured from nonvesicular igneous materials exhibits bidirectional wear typical of cutting or reciprocal sawing on hard media like bone or wood. The distal portion of a projectile point, manufactured from Jemez obsidian, was also recovered. A fragment from an indeterminate andesite metate and a complete andesite hoe were recovered from the roof fall providing evidence of additional functional activities.

Seventy-one lithic artifacts were recovered from the floor in Structure 13 (Table 11.55). The assemblage consisted primarily of chalcedony (58 percent), nonvesicular igneous materials (23 percent), and chert (18 percent). A single Jemez obsidian projectile point was also recovered. The floor contact assemblage indicates that secondary core reduction was carried out in the structure although no cores were recovered. Sixty-six percent of whole flakes lack dor-

sal cortex and 24 percent exhibit only partial dorsal cortex. The majority of flakes with platforms are single-faceted (49 percent). A single bifacial thinning flake manufactured from a nonvesicular igneous material indicates that bifacial tool manufacture also occurred.

Unutilized flakes and small angular debris (7 percent) make up the majority of the assemblage. Only two tools were recovered. A piece of small angular debris exhibits unidirectional wear typical of scraping on hard media like bone or wood. The utilized edge was incomplete, indicating that the tool was utilized, broken, and discarded within the structure. A medial portion of an obsidian projectile point was also recovered.

Seventy-one lithic artifacts were recovered from the vent shaft in Structure 13 (Table 11.56). The majority of the lithic assemblage consisted of chalcedony (51 percent), nonvesicular igneous materials (25 percent), and chert (17 percent). Other material categories represented by few artifacts are quartzite ( $n = 3$ ), Jemez obsidian ( $n = 1$ ), and sandstone ( $n = 1$ ). With the exception of chert, the assemblage indicates a clear emphasis on later stages of secondary core reduction: 94 percent of whole flakes lack dorsal cortex. Chert is the only material that exhibits both early and later stages of core reduction. The majority of platforms are either single-faceted (78 percent) or collapsed (20 percent), again indicating an emphasis on later stages of secondary core

reduction. The assemblage exhibits no evidence of tertiary formal tool manufacture. Three multiplatform cores made of chalcedony, chert, and nonvesicular igneous material were also recovered.

Unutilized flakes (83 percent) and unutilized small angular debris (7 percent) make up the majority of the assemblage. A single biface manufactured from chert was complete but lacked evidence of utilization. A fragment from a fine-grained quartzite cobble with pigment residue and a fragment from a fine-grained sandstone shaped slab were recovered from the vent shaft.

Thirty-two lithic artifacts were recovered from a subfloor human burial (Feature 131) in Structure 13 (Table 11.57). The majority of materials recovered fell into two material categories, chalcedony (41 percent) and quartzite (31 percent). Low frequencies of chert (n = 5),

nonvesicular igneous materials (n = 2), Jemez obsidian (n = 1), and "other" igneous (n = 1) material categories were also represented. Although the assemblage is small, it indicates secondary core reduction—86 percent of whole flakes lack dorsal cortex and 8 percent exhibit partial dorsal cortex. The majority of platforms on flakes are single-faceted (87 percent). No evidence of formal tool manufacture was recorded.

Unutilized flakes (87 percent) and unutilized small angular debris (3 percent) make up the majority of the assemblage. A single projectile point was complete and manufactured from Jemez obsidian. A complete basin metate, manufactured from unspecified igneous material, was also recovered from the subfloor burial.

Thirty-one lithic artifacts were recovered from all the floor features in Structure 13 (Table 11.58). The majority of the entire lithic assem-

Table 11.55. LA 265, Structure 13, Floor Contact

	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	20	3	60	-	-	1	20	5	7
Flake	40	63.5	9	14.3	-	-	14	22.2	63	88
Flake, Bifacial Thin	-	-	-	-	-	-	1	100	1	1
Angular Debris, Utilized	-	-	1	100	-	-	-	-	1	1
Projectile Point	-	-	-	-	1	100	-	-	1	1
Total	41	57.7	13	18.3	1	1.4	16	22.5	71	100

Table 11.56. LA 265, Structure 13, Ventilator Shaft

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	40.0	2	40.0	-	-	-	-	1	20.0	-	-	5	7.0
Flake	33	55.9	8	13.6	2	3.4	1	1.7	15	25.4	-	-	59	83.0
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Core, Multiplatform	1	33.3	1	33.3	-	-	-	-	1	33.3	-	-	3	4.0
Biface	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Shaped Stone	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Cobble with pigment	-	-	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Total	36	50.7	12	16.9	3	4.2	1	1.4	18	25.4	1	1.4	71	100.0

Table 11.57. LA 265, Structure 13, Human Burial

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Other Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	1	100.0	-	-	-	-	-	-	-	-	-	-	1
Flake	11	39.3	5	17.9	10	35.7	-	-	2	7.1	-	-	28	87.0
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	-	-	1	3.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	3.0
Metate, Basin	-	-	-	-	-	-	-	-	-	-	1	100.0	1	3.0
Total	13	40.6	5	15.6	10	31.3	1	3.1	2	6.3	1	3.1	32	100.0

Table 11.58. LA 265, Structure 13, Floor Features

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	Angular Debris	2	66.7	1	33.3	-	-	-	-	-	-	-	-	3
Flake	5	20.0	6	24.0	3	12.0	-	-	11	44.0	-	-	25	80.0
Core, Multiplatform	1	100.0	-	-	-	-	-	-	-	-	-	-	1	3.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	3.0
Shaped Stone	-	-	-	-	-	-	-	-	-	-	1	100.0	1	3.0
Total	8	25.8	7	22.6	3	9.7	1	3.2	11	35.5	1	3.2	31	100.0

Table 11.59. LA 265, SU 13 Floor Features, Summary of Fauna

	Feature 129		Feature 135		Feature 138		Feature 145		Feature 207	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	3	75.0%	-	-	7	30.4%	3	8.6%
Medium to large mammal	-	-	-	-	-	-	8	34.8%	1	2.9%
Gunnison's prairie dog	-	-	-	-	-	-	1	4.3%	-	-
Medium to large rodent	-	-	-	-	-	-	1	4.3%	-	-
Desert cottontail	-	-	1	25.0%	-	-	3	13.0%	28	80.0%
Black-tailed jack rabbit	-	-	-	-	-	-	-	-	3	8.6%
Dog	1	100.0%	-	-	1	100.0%	-	-	-	-
Medium artiodactyl	-	-	-	-	-	-	3	13.0%	-	-
Group Total	1	100.0%	4	100.0%	1	100.0%	23	100.0%	35	100.0%
Fetal, neonate	-	-	-	-	-	-	10	43.5%	-	-
Immature (1/2-2/3 grown)	-	-	-	-	-	-	-	-	1	2.9%
Burned	-	-	-	-	-	-	2	8.6%	-	-
Complete	-	-	-	-	-	-	-	-	4	11.4%
>75% complete	-	-	-	-	-	-	-	-	2	5.7%
50-75% complete	-	-	-	-	-	-	1	4.3%	-	-
25-50% complete	1	100.0%	-	-	-	-	4	17.4%	7	20.0%
<25% complete	-	-	4	100.0%	1	100.0%	18	78.3%	22	62.9%

\* denotes a partial skeleton counted as one specimen

blage consists of nonvesicular igneous materials (36 percent), chalcedony (26 percent), and chert (23 percent). Other material categories represented by low frequencies of lithic artifacts are quartzite (n = 3), Jemez obsidian (n = 1), and sandstone (n = 1). The small number of

lithic artifacts recovered from these features limits interpretations about reduction. The debitage lacking dorsal cortex represent 88 percent of the whole flakes and debitage with partial dorsal cortex make up 11 percent of the assemblage indicating an emphasis on second-

ary core reduction. Unutilized flakes (80 percent) and unutilized small angular debris (10 percent) make up the majority of the assemblage. The only tools recovered were the distal portion of a Jemez obsidian projectile point and a fragment of a shaped fine-grained sandstone slab.

**Fauna.** Low frequencies of animal bone were analyzed from this structure either reflecting sampling or relatively low artifact content in the structure fill (Table 11.59). Unlike other structures, the Structure 13 ventilator shaft is clean with a good number of intrusive animals (pocket gophers and lizards).

An interesting find is the bird wings with the human burial below the Structure 13 floor. These include a right and a left wing from a flicker and a left wing from a meadowlark. Since these are rare occurrences from Peña Blanca Early Developmental period contexts they may represent burial goods. The flicker could be either the red shafted or yellow shafted variety. The red shafted resides from the mountains to lowland valleys throughout the state while the yellow variety is found west to the Rio Grande. It would be interesting to know the placement of these, the bone tools, and the toad skeleton.

Another interesting presence is the fetal and/or very immature artiodactyl in Features 141 and 145 (Table 11.59). The rib found in Feature 145 is so small it has to be fetal and therefore was taken before June, probably in April or May. Other fetal artiodactyl elements recovered from Feature 141 include an incisor, a thoracic vertebra arch, and a rib.

Burning is fairly rare for animal bone. Taxa with burning include cottontail rabbits from Feature 141 represented by a radius and ulna and three tibias with scorching on the distal ends. Evidence of roasting on a small mammal from the roof fall exhibited a scorch that occurred after the bone was discarded. A jackrabbit ilium with a scorch on one end (roasting?), a heavily burned cottontail calcaneus, and a small scorch on one of the fetal artiodactyl rib fragments from Feature 145 may

also represent roasting.

Bone tools were fairly common in this structure (see Chapter 20). Seven specimens were recovered from upper fill, roof fall, floor contact, and the subfloor human burial. The fine-point awl and mat weaving tool were among burial goods recovered from the subfloor burial of a 50+ year old female. Three fine-point awl fragments were recovered from the upper fill and may represent mixed domestic refuse. A fine-point awl that was found on the structure floor may represent a personal item intentionally left behind at abandonment.

Four *Anodonta californiensis* shell fragments were recovered from the structure. Three fragments were recovered from the upper fill and may represent monitored abandonment. One fragment was recovered from the structure floor. Low frequencies of shell were recovered from within all of the LA 265 structures.

Turquoise fragments were recovered from Feature 207, a wall niche. The niche was covered with a slab suggesting that the contents were offertory. A second piece of turquoise was recovered from the ventilator shaft.

### Summary

Structure 13 was roughly circular, just over 4 m in diameter, 1.5 m deep with a floor area of 12.56 sq m. It was the smallest of the deep pit structures excavated at LA 265 and is the second smallest Early Developmental period pit structure excavated during this project. Within its relatively limited floor space, it had 22 internal features, including a central fire hearth, two cobble-filled "warming" pits, four main structural support post holes, scattered smaller post holes, and a number of additional pits of varying size and indeterminate function. Based on the available floor space, three to five individuals are estimated to have resided within the structure.

The thermal features display a distinct north-south arrangement perpendicular to the hearth/ash pit/ventilator axis. This arrangement effectively divides the structure into east and west halves and potentially reflects the

organization of intramural activities and sleeping areas while conforming to a spatial pattern that was commonly adhered to by Early Developmental period households. This east-west division perpendicular to the hearth/ash pit/ventilator axis may symbolize and reinforce a biseasonal adaptation and ritual system.

#### STUDY UNIT 14

Study Unit 14 was an extramural area south and southwest of Structure 4, located in grid units 420-440N/488-503E, in the southernmost portion of Area 1 (Fig. 11.2). Features excavated included a large pit/activity area with seven interior features (Feature 56), two large bell-shaped storage pits, a small probable storage pit, a small pit of unknown function, and a number of postholes, ten of which are arranged in a long east-west arc opening toward Structure 4 (Fig. 11.2, 11.41). None of these features was observed on the modern ground surface prior to mechanical stripping.

##### *Feature 56*

Feature 56 was a large pit situated 10 m southeast of Structure 4. In plan view it appeared as an irregular oval measuring 4.48-by-2.3 m in length and width by 53 cm deep. The feature was wider at the north end, with a bulge (110-by-50 cm) extending from its northeast wall. The presence of seven interior features, including four small storage pits (Features 152, 156, 158 and 166), one possible pot rest (Feature 157), and two possible activity areas (Features 146 and 147), suggest that Feature 56 was used as a semi-subterranean workspace. No good evidence existed that the feature was ever roofed.

The feature was bisected along its long north-south axis, with the entire west half removed as one unit. After the west-facing profile was drawn, the east half was divided into five sections and excavated one at a time, creating four east-west profiles. These profiles revealed a complex stratigraphy. A few strata extended across much of the feature, suggest-

ing sheetwash or other natural fill processes, but many appeared as small isolated pockets and lenses, which suggests discrete dumping episodes. Large amounts of domestic refuse, bone and ceramic fragments, lithics, charcoal, and fire-cracked rock were recovered, as well as one projectile point and a historic button. Most of the bone was fragmentary; 70 of the 76 pieces recovered were less than 50 percent complete. Small mammal ( $n = 28$ ), medium artiodactyl ( $n = 14$ ) and desert cottontail ( $n = 11$ ) were the dominant taxa represented. This feature also yielded the only piece of eggshell recovered from the site, but analysis could not provide species identification. It should be noted that at least one turkey had been kept on the site; a turkey burial (Feature 19) was found in the fill of a large storage pit (Feature 15) in Study Unit 3.

Final excavation revealed vertical walls on the north, east, and south, but a sloping (20-30 degrees) west wall. Feature 147 was a large depression in the center of the east half of the Feature 56 floor, which measured 1.6-by-1.5 m and was 19 cm deeper than the surrounding floor (Fig. 11.41). It had fairly vertical west and north walls with a sloping south wall. The vertical east wall of Feature 56 formed its east wall. Most of the fire-cracked rock found on or near the floor came from this depression and along its southwest edge. Much of its floor was ash stained and a 40-cm-diameter reddish brown stain was noted on its east half, 20 cm from the east wall, indicating use of this area as a hearth. This feature appeared to be the main activity area within Feature 56. Feature 146 was found just to the northeast, in the lobe protruding from the northeast wall. This area measured 110-by-65 cm with a basin-shaped floor. This floor was 9 cm higher than the floor of Feature 147, but 12 cm deeper than the northern floor of Feature 56. This area may represent a secondary activity or storage area.

**Floor Features.** The remainder of the floor features were all found in the southern half. Features 152, 156, and 166 were small, bell-shaped pits excavated into the floor at the

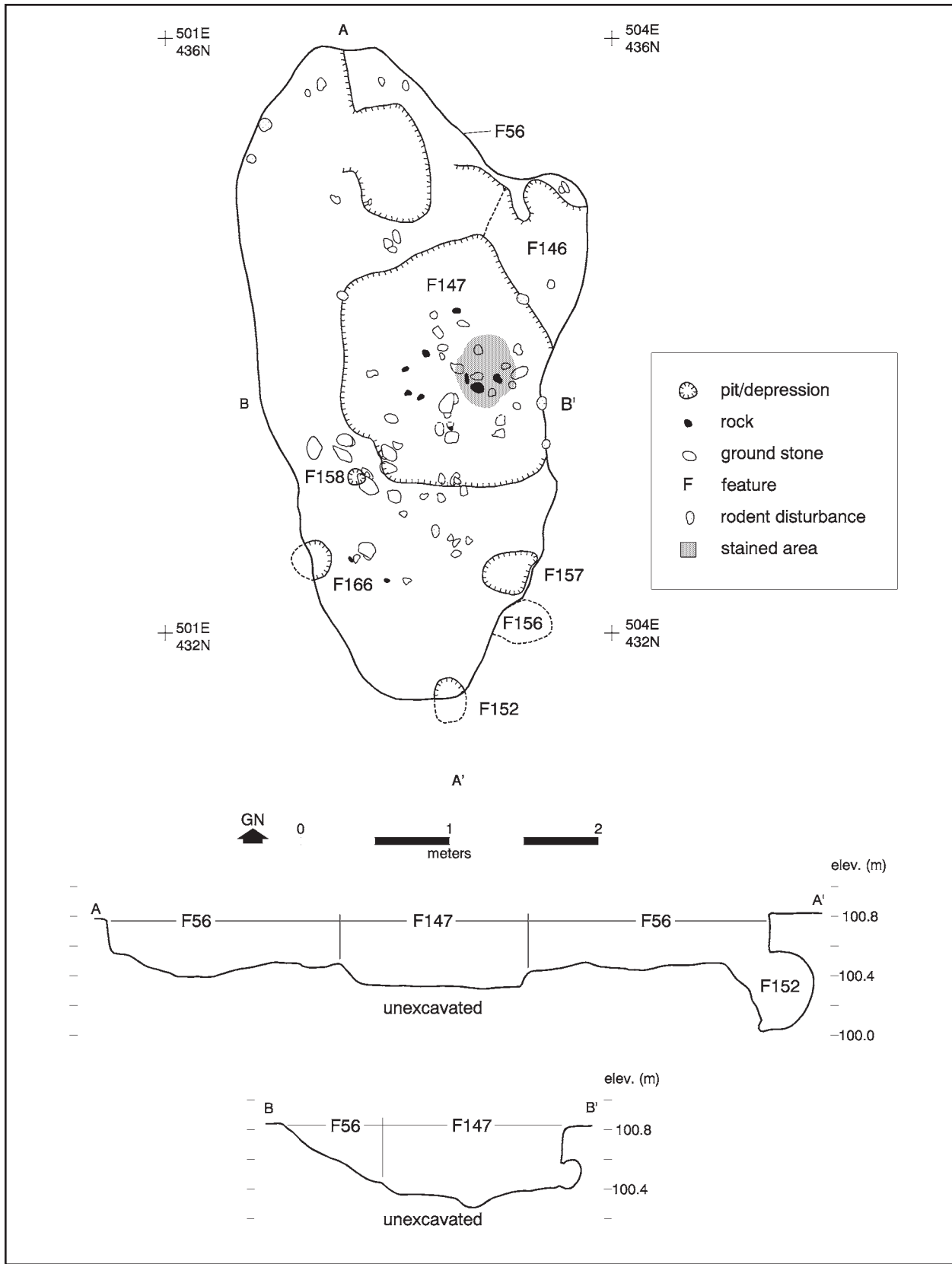


Figure 11.41. Study Unit 14, Feature 56, plan and profile.

edges of the Feature 56 walls in the southern end of the larger feature. These three pits had maximum openings at floor level between 16 and 32 cm, were from 27 to 44 cm deep, and expanded to as much as 53 cm in diameter below floor level (Figs. 11.41, 11.42). Feature 158 was a fourth subfloor pit located halfway between the southwest edges of Features 56 and 147 (Fig. 11.42). It had a floor level opening of 27 cm, was 27 cm deep, and expanded only slightly to a 30 cm maximum diameter below floor level. A fifth feature, Feature 157, was a shallow depression on the floor just north of Feature 156, measuring 29-by-23 cm in length and width by 4 cm deep, and was interpreted as a possible pot rest.

The construction strategy of Feature 56 appeared to have been a simple excavation to

create a large crude pit. No prepared, plastered, or highly use-compacted surfaces were observed, and the floor was irregular and uneven. The sloping west wall appears to form a wide ramped entrance, although the north and south ends were quite shallow, 20 and 40 cm deep. No postholes were observed in the immediate vicinity of the feature, suggesting that it had been utilized as a warm weather open-air workspace.

**Pit Features Adjacent to Feature 56.** Features 61, 62, and 169 formed a tightly grouped cluster of pits southwest of Feature 56 (Fig. 11.40). Feature 62, the largest of the three, was a large, slightly bell-shaped storage pit located less than 1 m southwest of Feature 56. The pit was 75 cm in diameter at ground level, flared to 90

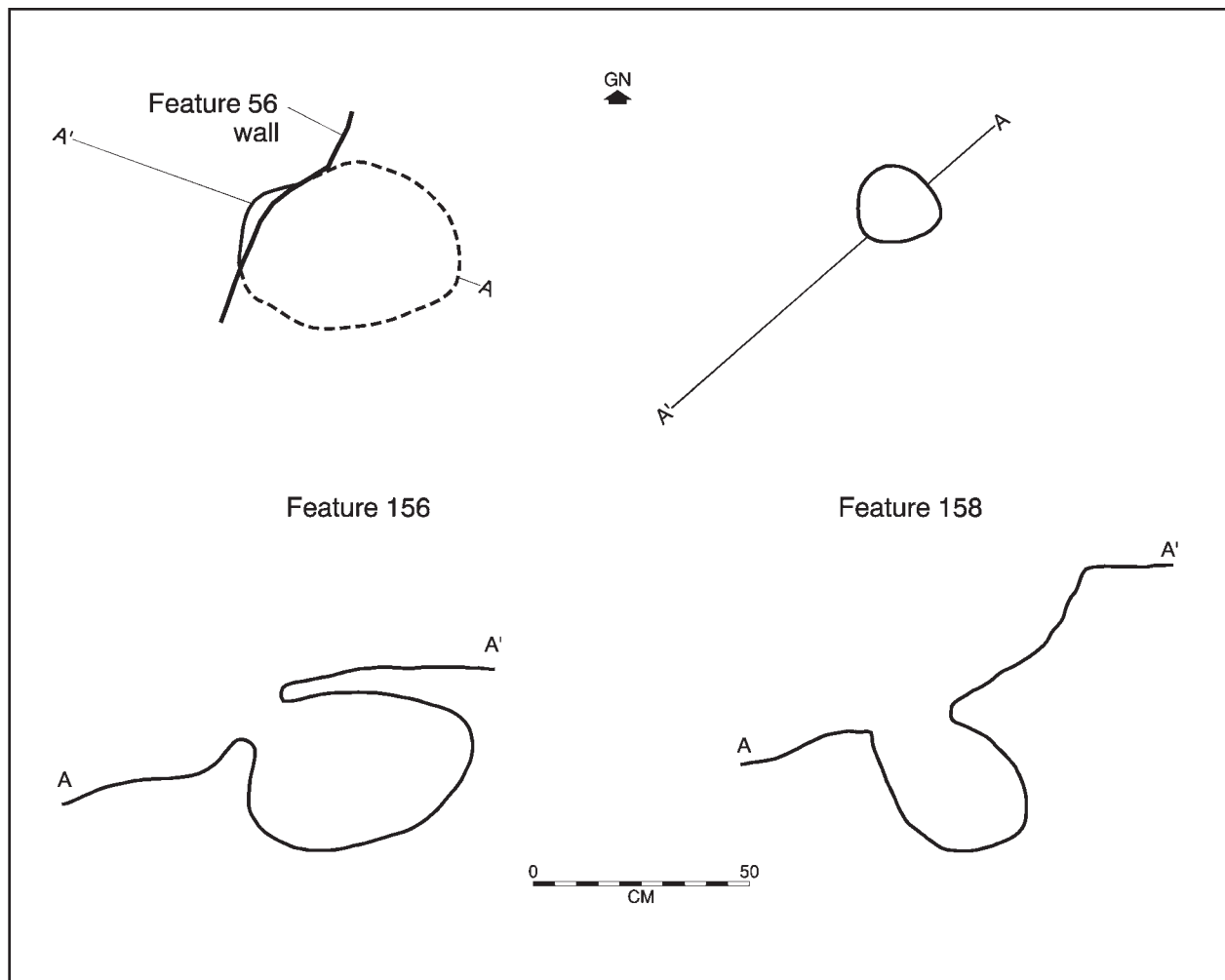


Figure 11.42. Study Unit 14, Features 156 and 158, plan and profile.



cm in diameter, and was 40 cm deep. Fill of Feature 62 was midden refuse consisting of ceramic and lithic artifacts, bone, and fire-cracked rock. Fill of the feature was homogeneous and did not exhibit bedding indicative of multiple trash disposal events.

Feature 61 was another bell-shaped storage pit, southwest of Feature 62, which exhibited evidence of reuse. The pit opening was originally about 30 cm in diameter at ground level, flared to a diameter of 64 cm, and was 52 cm deep (Fig. 11.43). In profile, it appeared that the pit was almost completely filled with a single stratum of midden (Stratum 3). The ground surface above the neck of the pit had then been excavated to form a shallow basin 55 cm in diameter and 9 cm deep. This mixed chunks of the sterile Bk subsoil with the upper portion of Stratum 3 in the pit below to create Stratum 2. The basin then filled with eolian sediments containing some charcoal, a few bone fragments, and one piece of fire-cracked rock. No oxidation was noted in the basin, however, and the purpose of this reuse of the feature is unclear.

Feature 169 was a small pit of unknown function. The pit was cylindrical in shape, measuring 47 cm in diameter and 36 cm deep. It had vertical walls, and its fill consisted of five distinct strata, reflecting distinctly different episodes of infilling over a long period of time. Carbonate accumulation was noted on its walls and cracks in the fill, leading to the possibility that this feature was utilized and abandoned long before the others were created.

**Posthole Alignment.** Removal of the upper sands in the area between Feature 56 and Study Unit 4 revealed many small carbon stains intruding into the sterile Bk stratum. Most were obvious rodent disturbances, but 25 were treated as potential features. These were mapped, given a letter designation, and excavated. The larger ones were bisected in the usual manner, but many of the smaller ones were bisected by excavating a shovel-wide window, which allowed a better look at the smaller profiles.

Thirteen of these small features were determined to be postholes because of their

vertical side walls and small diameters, ten of which (Features 246, 247, 248, 249, 250, 251, 253, 254, "B" and "E") formed an arc over 12 m long opening northward toward Study Unit 4 (Fig. 11.40). The postholes were fairly regularly spaced between 1 and 2 m apart. The smallest was 10 cm in minimum diameter by 10 cm deep while the largest was 29 cm in minimum diameter by 18 cm deep. Their fill was similar, generally 10YR 5/4 yellowish brown or 10YR 4/4 dark yellowish brown silty loam with varying amounts of charcoal, pumice, and small gravel. No clear evidence of wall construction associated with the posthole alignment was apparent, and no evidence of an associated use surface was identified. It is possible that these are the remnant postholes of some type of ramada structure sheltering a work area between Study Unit 4 and Feature 56.

Feature 227 was a small shallow pit of unknown function located between the western end of the posthole alignment and Study Unit 4. In plan view it appeared as a 53-by-46 cm carbon-stained oval with a smaller 24-cm-diameter tail extending from its south side.

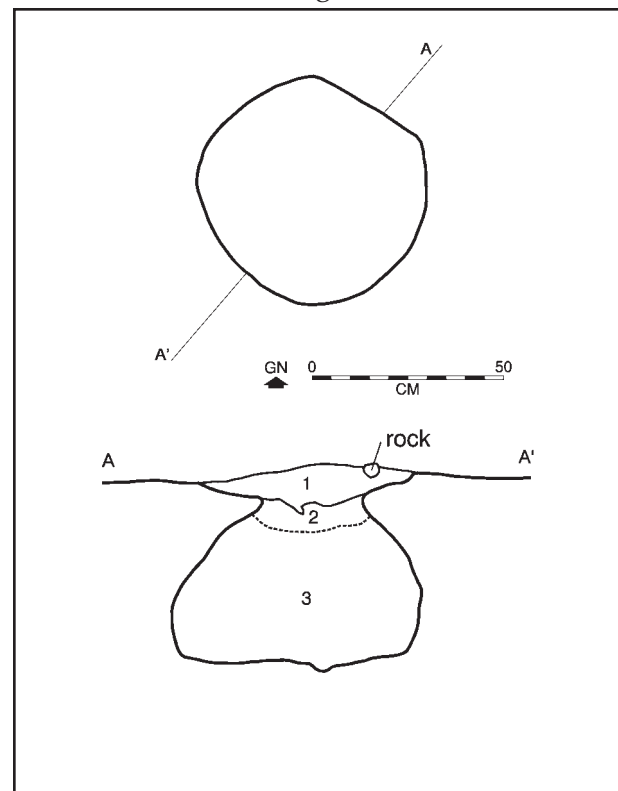


Figure 11.43. Study Unit 14, Feature 61, plan and profile.

Bisection revealed that the southern section was a rodent burrow angling up from the south and cutting across the floor of the feature. Its location, less than 1 m north of the posthole alignment, suggests a possible association. Its fill was identical to that of several of the postholes. Although two small pieces of fire-cracked rock were recovered, no oxidation and very little charcoal were noted. Ten lithic artifacts and eleven ceramics were recovered, but the shallow depth (17 cm) of the feature makes it unlikely to have been utilized as a storage pit.

Feature 1 was a 29-cm-deep rodent-disturbed posthole located south of the crescentic alignment, and Feature 252 was another isolated posthole, 31 cm deep, located between Feature 56 and the eastern portion of the alignment.

### *Artifacts*

Artifacts recovered from within the extramural work space (Feature 56) and its intramural features and the cluster of extramural pits and postholes were identified and analyzed. Artifact totals included 145 ceramics, 252 lithic artifacts, and 86 animal bones. Artifact class distributions are provided in Tables 11.43, 11.60, 11.61, and 11.62). Brief summaries by context are presented below.

**Ceramics.** Of the 145 ceramics analyzed from Study Unit 14 features, 122 were from within Feature 56, the extramural work area, 17 were from extramural pits, and 6 were from the extramural posthole alignment (Table 11.43). All contexts were dominated by Middle Rio Grande Plain pottery. Single sherds of Mogollon Red-on-brown and San Francisco Red came from within Feature 56. A Tallahogan-like sherd came from the extramural pits. The type distribution is typical of the Early Developmental contexts at LA 265. The majority of the sherds were from plain jar body and neck portions. Few bowl rim and body sherds were identified. Eleven percent of the sherds exhibit wear typical of cooking use. This is a typical domestic refuse assemblage for LA 265.

**Lithic Artifacts.** Two hundred and fifty-two lithic artifacts were analyzed from the interiors of Feature 56 and features and small extramural pit features. Within Feature 56, 225 lithic artifacts and 27 other artifacts were associated with the small extramural pits. These assemblages are summarized below.

Two hundred and twenty-five lithic artifacts were recovered from a possible structure with interior features (Study Unit 14) (Table 11.60). The majority of the assemblage consisted of Jemez obsidian (32 percent), chalcedony (27 percent), nonvesicular igneous materials (24 percent), and chert (11 percent). Lower frequencies of quartzite ( $n = 10$ ), "other" local material ( $n = 2$ ), and vesicular igneous material ( $n = 1$ ) were also represented. The general assemblage indicates an emphasis on later stages of secondary core reduction with 71 percent of the whole flakes lacking dorsal cortex. Jemez obsidian, the most abundant material represented in the assemblage, consists of 29 bifacial thinning flakes, 11 of which exhibit retouched platforms. Forty-one percent of the obsidian platforms were collapsed. Collapsed platforms often occur during the manufacture of obsidian. Only one single-platform quartzite core was recovered.

Unutilized flakes (72 percent) and unutilized small angular debris (8 percent) make up the majority of the assemblage. Both expedient and formal tools were recovered from the provenience. Two utilized flakes manufactured from nonvesicular igneous material exhibit bidirectional cutting wear and unidirectional scraping wear consistent with working on hard media like bone or wood. Two Jemez obsidian biface fragments lack evidence of use and do not exhibit complete functional edges—these artifacts may represent manufacturing failures. A third whole biface lacks evidence of wear but exhibits a functionally complete edge. An obsidian projectile point base contains an edge with bidirectional rounding and striations. The lack of similar wear patterns on the opposing edge indicates that the projectile point may have been used as a hafted knife. Three manos are indicated by

quartzite, sandstone, basalt, and coarse-grained rhyolite ground stone fragments. A fragment of ground vesicular basalt indicates an indeterminate metate. A whole expedient handstone was also recovered.

Twenty-seven lithic artifacts were recovered from small pits in Study Unit 14 (Table 11.61). The assemblage was composed of chalcedony (n = 9), nonvesicular igneous materials (n = 7), chert (n = 6), Jemez obsidian (n = 4), and quartzite (n = 1). The assemblage is small but indicated an emphasis on later stages of secondary core reduction—73 percent of the whole flakes lack dorsal cortex and the majority of flake platforms were single-faceted (60 percent). A single multiplatform core and a hammerstone were also recovered. Unused flakes (n = 18) and unutilized small angular debris (n = 5) constitute the majority of the assemblage. A single biface fragment is manufactured from Jemez obsidian. The functional edge was not complete—this artifact may represent a manufacturing failure. A fine-grained rhyolite-shaped slab was also recovered.

### *Summary*

Study Unit 14 was an extramural area south and southwest of Structure 4. It was comprised of an irregularly outlined pocket structure/workspace that had seven interior features (Feature 56), two large bell-shaped storage pits, a small probable storage pit, a small pit of unknown function, and a number of postholes, ten of which are arranged in a long east-west arc opening toward Structure 4. The cluster of features seems to represent at least two temporal and activity components.

Small pocket structures or workspaces have been dated to the early part of the LA 265 occupation. Feature 56 was not dated, but may be part of this early occupation strategy. Feature 56 intramural features suggest a variety of activities were conducted in a small space. One large feature, Feature 147, may have supported light-duty thermal processing with adjacent Feature 146 supplying the source of heated rock and coals. This feature is similar to Feature

34 within Study Unit 3 and appears to be predominantly a workspace. Other pocket structures, Structures 27 and 33, may have served as seasonal work areas and sleeping spaces.

The trio of pits south of Feature 56 are storage pits suggesting that they were used in conjunction with Feature 56 processing activities. While an arrangement of thermal processing and dry storage features makes sense for site structure and activity organization, there is little data with which to firmly assert their temporal/functional association. These smaller storage features suggest household level storage. The features are smaller than similar storage features excavated in Study Unit 2.

Finally, the arced array of postholes may have formed a windbreak or divided the site into distinct household spaces. The former interpretation is considered more likely because no other structures or activity spaces were located south of the stockade or fence line. Linear arrangements of postholes are common on Early Developmental period sites: a similar configuration was uncovered at LA 6170 during this project.

### SITE SUMMARY

Two-hundred seventy cultural features were excavated with chronometric dates suggesting and Early Developmental period occupation spanning the mid to late AD 600s to the mid 800s or early 900s. This 200-year span potentially is represented by site use and occupation patterns reflecting early seasonal residence followed by later more permanent year-round residence. All occupations were reliant on corn agriculture with a suite of wild plant foods consistently represented as well as small to medium field animals and larger grassland and upland artiodactyls. With three deep pit structures, two pocket structures, and two subterranean, seasonal workspaces or structures, LA 265 has the widest array of features in terms of size, form, and distribution encountered at any of the NM 22 sites with Early Developmental period components.

A consideration of the LA 265 occupation

Table 11.60. LA 265, SU 14, Possible Structure with Intramural Features, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Other Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	14	70	-	-	-	-	3	15	3	15	-	-	-	-	20	8
Flake	46	28	25	15.2	7	4.3	38	23.2	46	28	-	-	2	1.2	164	72
Flake, Bifacial Thin	-	-	-	-	-	-	29	100	-	-	-	-	-	-	29	12
Core, Single Platform	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	-	-	2	100	-	-	-	-	2	<1
Projectile Point	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Biface	-	-	-	-	-	-	2	66.7	1	33.3	-	-	-	-	3	1
Mano, Unknown	-	-	-	-	1	33.3	-	-	2	66.7	-	-	-	-	3	1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Expedient handstone	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Total	60	26.7	25	11.1	10	4.4	73	32.4	54	24	1	0.4	2	0.9	225	100

Table 11.61. LA 265, SU 14, Small Pits, Lithic Artifact Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	20.0	3	60.0	-	-	-	-	1	20.0	5	18.0
Flake	8	44.4	2	11.1	-	-	3	16.7	5	27.8	18	66.0
Core, Multiplatform	-	-	1	100.0	-	-	-	-	-	-	1	3.0
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	1	3.0
Biface	-	-	-	-	-	-	1	100.0	-	-	1	3.0
Shaped Stone	-	-	-	-	-	-	-	-	1	100.0	1	3.0
Total	9	33.3	6	22.2	1	3.7	4	14.8	7	25.9	27	100.0

Table 11.62. LA 265, Summary of Fauna from SU 14

	Feature 56		Feature 62		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-large bird	1	1.3%	-	-	1	1.2%
Small mammal	28	36.8%	3	30.0%	31	36.0%
Medium to large mammal	3	3.9%	2	20.0%	5	5.8%
Large mammal	6	7.9%	-	-	6	7.0%
Botta's pocket gopher	1	1.3%	-	-	1	1.2%
Woodrats	2	2.6%	1	10.0%	3	3.5%
Desert cottontail	11	14.5%	1	10.0%	12	14.0%
Black-tailed jackrabbit	4	5.3%	1	10.0%	5	5.8%
Medium artiodactyl	14	18.4%	1	10.0%	15	17.4%
Mule deer	2	2.6%	-	-	2	2.3%
Pronghorn	1	1.3%	-	-	1	1.2%
Eggshell	1	1.3%	-	-	1	1.2%
Horned lizards	2	2.6%	-	-	2	2.3%
cf. Woodhouse toad	-	-	1	10.0%	1	1.2%
Total	76	100.0%	10	100.0%	86	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Burned	12	15.8%	1	10.0%	13	15.1%
Complete	5	6.6%	2	20.0%	7	8.1%
50-75% complete	1	1.3%	1	10.0%	2	2.3%
25-50% complete	8	10.5%	1	10.0%	9	10.5%
<25% complete	62	81.6%	6	60.0%	68	79.1%

sequence is primarily based on archaeomagnetic dates and structure abandonment, filling, and reuse evidence. Lacking the precision afforded by dendrochronological dating, this sequence is provisional. Ceramic dating is useful for sorting out sequence because of the broad manufacture dates for the primary pottery types recovered and the consistently low occurrence and restricted regional distribution of the nonlocally produced pottery types. Other structures that are definitely outside the project corridor indicate that the occupation sequence is incompletely documented.

The earliest dated component at LA 265 was Structure 33, which had an archaeomagnetic centroid date of AD 680. Located in Study Unit 2, Structure 33 was within a cluster of storage/burial and processing pits and another pocket structure, Structure 27. Structure 33 predates by 60 years the next earliest component represented by Structure 13. While it is probable that some extramural features in Study Units 2 and 3 are contemporaneous with Structure 33, there are no corroborating dates.

The earliest deep, permanent residential pit structure was Structure 13, which had an archaeomagnetic centroid date of AD 740. It is potentially contemporaneous with Structure 33, a pocket structure, which had an archaeomagnetic date of AD 750. Structure 13 is located in the east portion of LA 265 with an associated cluster of thermal, storage, and processing pits, of which some were associated with the Structure 13 residential occupation. Structure 13 is smaller than most of the deep pit structures excavated by the NM 22 project and is well below the average size for Early Developmental pit structures currently known for the Northern Rio Grande (Lakatos 2003). Smaller permanent structures and pocket structures may be a continuation of early pulses of agricultural population movement up the Rio Grande that started with the earliest Developmental occupation at LA 6171.

Structure 13 occupation and abandonment was followed by the construction, occupation, and abandonment of Structure 4 in the early AD 800s. Construction of Structure 4 may rep-

resent movement of Structure 13 residents to a new house, as Structure 13 became unmain- tainable. Structure 4 is south of a complex of thermal features, undifferentiated processing pits, large and small storage pits, work areas, and burial pits. If Structure 4 and these pit clusters in Study Units 2, 3, and 14 are contemporaneous, then during the early 800s there was a significant expansion of the occupation pattern and an elaboration of the facilities and space use over previous occupations.

The last pit structure constructed and occupied was Structure 1 during the middle 800s. Structure 1 was the largest with the fewest ancillary pit features. Refuse layers in the upper fill and human and dog interments from lower elevations indicate that Structure 1 was not the last structure occupied and abandoned at LA 265. The dense and varied pit complex in Study Units 2 and 3 may contain pit features that may have supported the Structure 1 occupation. With few intramural features and possible footdrum pits surrounding the large hearth, Structure 1 may have housed domestic and corporate ritual activities for a small number of individuals (less than 20?).

Based on the absence of tenth-century ceramics at LA 265 it seems most likely that the majority of the site was abandoned by the middle 900s. In fact, if excavated components are an indication of the occupation sequence and span, then Structure 1 is the latest occupied structure for the NM 22 project. Since considerable site areas were removed by earlier road construction and all sites extended outside the project corridor, it is possible that later or contemporaneous structures exist or existed at the other sites.

Subsistence technology and strategy as represented by feature types, sizes, and distribution, and the range of recovered artifacts from refuse disposal contexts was similar to the other NM 22 Early Developmental sites. The main difference between LA 265 and the other sites is in the scale and sheer number of extramural features. By comparison, LA 115862, which may have been occupied for a short time (less than 20 years and probably less than 10 years), had eight extramural features

and LA 6169 with two deep pit structures and a longer occupation than LA 115862, had 13 features that could be assigned to the Early Developmental period. Neither site had substantial extramural storage features, but both had extramural burial pits. LA 265 had 82 extramural features, including postholes. The features displayed two well-spaced distributions within a large area and were tightly clustered to overlapping. These two spatial distribution patterns may reflect differences in how open space was viewed or organized. LA 6170 and LA 6171 are more similar to LA 265 in that they have multiple deep pit structures, extramural features are more numerous, and their spatial distribution more complex.

In terms of technological organization as reflected in the range and variability within artifact classes, LA 265 was very similar to the other sites. Ceramics were dominated by locally made Middle Rio Grande Plain wares, accounting for 87.5 percent of the assemblage. San Marcial Black-on-white was the dominant decorated pottery type with the only Kana'a Black-on-white as the only nonlocal black-on-white type. A locally made Tallahogan-like pottery type was more common than San Marcial Black-on-white at LA 265 with Mogollon tradition pottery common, while not abundant. Interestingly, Mogollon Brown Wares are as common or more so than San Marcial Black-on-white. Overall, the ceramic types show a strong reliance on locally produced pottery with a strong affinity to pottery-producing areas to the west-southwest along the periphery of the Colorado Plateau.

The range of vessel forms is consistent across site components. Typically, plain jar bodies are dominant with white, brown, and red wares represented by bowls and jars. Canteen, seed jar, pitcher, and ollas occur in low frequencies, indicating a full suite of domestic forms were present, but never discarded in moderate or large quantity. Exotic forms include cloudblowers, a figurine, a spindle whorl, and miniature pinch pots. Unfired vessel fragments strongly suggest on- or near-site manufacture and firing of Middle Rio

Grande Plain ware pottery.

Chipped stone was predominated by core reduction debris of locally available chalcedony, basalt, and obsidian. Distribution of tool types and utilized debitage reflects a wide range of processing activities, but no focal tool manufacture or material processing areas. Debris is typically intermingled with the quotidian refuse that populates most of the large pit features and upper structure fill. Complete and broken projectile points, dominated by obsidian, reflect on-site tool production, disposal of points broken in use, some of which were discarded in conjunction with meat package butchering and processing. Whole projectile points occur throughout the site remaining from caching of arrows or tips and perhaps left as offerings. While most of the manufacture debris reflects a core-flake reduction trajectory, there is ample evidence that some formal tools were produced on-site for local or logistical hunting. The mixed lithic reduction strategy matches well with a broad-spectrum subsistence pattern.

Grinding implements reflect a wide range of food and resource processing. One- and two-hand manos and slab and basin metates were recovered from secondary contexts, such as roof fall, pit fill, and structure fill. No complete ground stone artifacts were recovered from primary contexts, such as structure or work area floors. Ground stone appears to have been regularly moved throughout the site. Ground stone fragments were widely distributed and only concentrated in the upper fill of Structure 1. In addition to corn and wild plant processing, a variety of activities are indicated by hoes, mortars, pigment covered cobbles, hide processors, and abraders. None of these artifacts are abundant, but they indicate that a full range of residential and domestic activities occurred on-site. The low frequencies are inconsistent with the evidence for a long occupation span suggesting that sampling and incomplete site excavation may have limited ground stone artifact recovery.

Food consumption focused on agriculture and field hunting with wild plant consumption and use well represented in the pollen data. Logistical hunting is not as well represented as

might be expected with ungulates and artiodactyls acquired in the Jemez Mountains and the surrounding grasslands. Low population levels probably increased the success of local hunting with long-distance forays an unnecessary com-

ponent of the subsistence strategy. While it is possible that foraging and hunting forays extended up the Rio Grande into the middle and upper Santa Fe River Basin and Tewa Basin, it was probably a rare occurrence.





# CHAPTER 12

## LA 6169

Stephen S. Post

### SETTING

LA 6169 is on the first terrace above the east extent of the ancient floodplain of the Rio Grande at an elevation of 1,609 m (5,275 ft), approximately 0.8 km northeast of its confluence with the Santa Fe River. The terrace at the north and south extremes of the artifact distribution is deeply cut by Pleistocene channels that drain the upper terrace slopes east of the site. The site environment is a plains-mesa grassland, with scattered junipers on the rocky slopes above the terrace to the east and an understory consisting of a variety of local perennial and annual plants, including grama grass, Russian thistle, broom snakeweed, and several species of cacti. The top of the terrace is covered by a thin to 2-m-thick deposit of eolian sand. Artifacts and cobble concentrations are dispersed over most of the terrace surface, and the highest densities of archaeological material occur along the edge of the terrace where the dune deposit has been thinned by sheet erosion and in wind-formed blowouts in the interior of the dune.

### PREVIOUS WORK AND PRELIMINARY RECORDING

LA 6169 was first recorded and partly excavated in the winter of 1961 by Frank Eddy and Ed Dittert of the Museum of New Mexico, who described a "U-shaped" room block partially enclosing a pithouse or kiva depression to the east, and an historic period farmhouse. One or two rooms were indicated by surface cobble clusters, while the remainder of the room block was an elongated low mound, ostensibly consisting of melted adobe. Dittert and Eddy intended to excavate LA 6169, but were preempted by road construction. Archaeological investigation was reduced to examination of the road cut. No evidence of subsurface structures was observed and the cultural deposit

was characterized as a "thin layer of trash." Dittert and Eddy concluded that the room block was smaller than originally suspected, and that other structures were located outside and to the west of the construction zone.

Subsequent recording by Peckham and Wells (1967) identified a 15- to 20-room U-shaped room block and a kiva depression. They surmised that the majority of the site had been "destroyed by highway construction." The site was not further investigated at this time.

Bruce Dickson (1979:91), in his compilation of regional survey data, lists LA 6169 as having 15 to 20 rooms and 2 kivas. This room and kiva count is based on Peckham and Wells (1967). Dickson did not actually visit and re-record the site. Additionally, the Early and Late Developmental period components were not reported in earlier documentation and are therefore not included by Dickson.

NMSHTD archaeologist Sandra Marshall (1997) could not confirm the presence of the 15-20 room U-shaped room block and scaled down the potential extent and complexity of the cultural remains. Marshall recorded nine features within the site area, of which, Features 3-5 and 7-9, would be affected by the highway-widening project (Fig. 12.1). Feature 3 was a shallow depression, Features 4, 5, and 8 were surface cobble clusters, and Features 7 and 9 were low density artifact scatters containing Early Developmental to Coalition period decorated and utility ceramics and chipped stone debris of locally available raw materials. Marshall was the first to recognize the potential for a Early and Late Developmental and Coalition period components.

Site evaluation provided in the data recovery plan (Ware 1997:27-28) suggested that LA 6169 was a deeply stratified multicomponent site with the potential for Early Developmental to Coalition period structural remains and extramural features, and remnant rock alignments

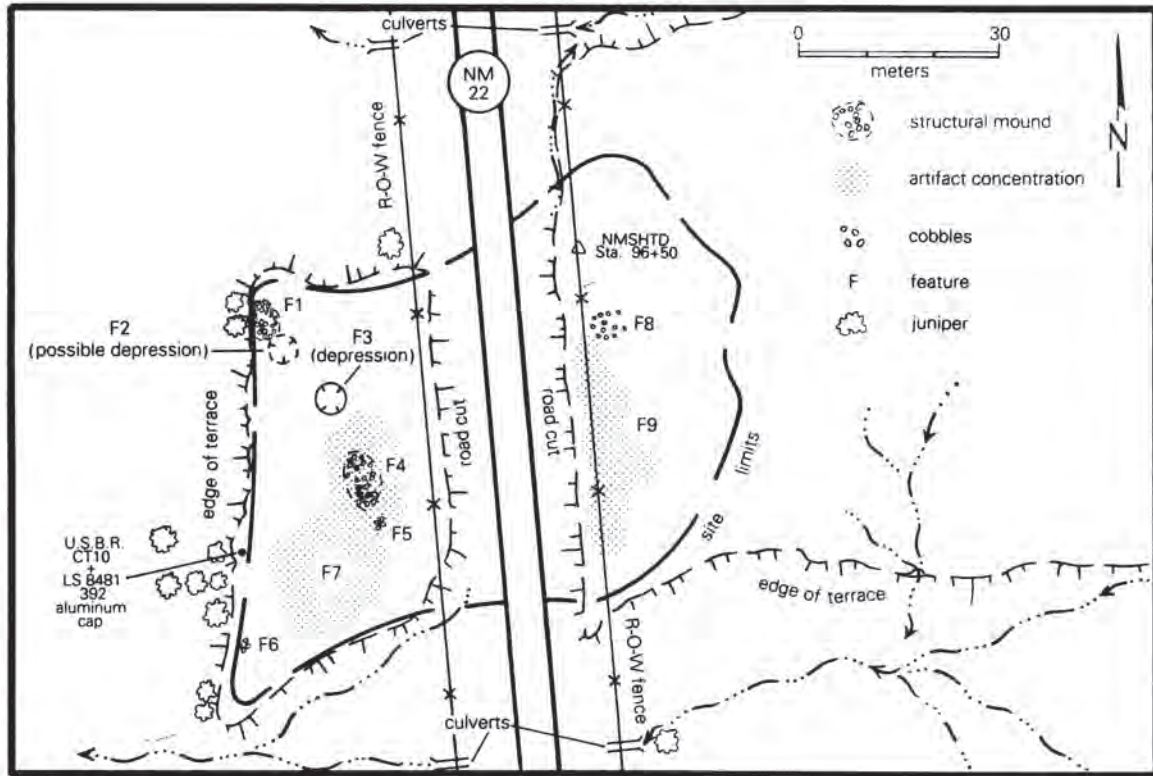


Figure 12.1. Map of LA 6169, after Marshall (1996).

representing cobble-bordered grid gardens. The grid gardens presumably represented the latest prehistoric component. The oval-shaped cobble ring at the northeast edge of the terrace was presumed to date to the historic period and would be further investigated through an ethnohistorical inquiry. Excavation in 1998 focused on the potentially complex prehistoric components within the NM 22 right-of-way.

#### PRE-EXCAVATION DESCRIPTION

LA 6169 was re-examined prior to excavation and in preparation for surface collection. Dividing the site into west (Area 1) and east (Area 2) halves with the NM 22 roadbed in the middle, numerous cobble and artifact concentrations were isolated from the general site surface cultural deposit.

Area 1 had cobble alignments that were interpreted as the remains of an adobe-walled pueblo at the edge of the west right-of-way. Five meters to the north of the possible room block there was an eroded midden that covered rough-

ly 250 sq m and with the highest concentration of Coalition period Santa Fe Black-on-white pottery. There were two shallow 4-m-diameter depressions immediately east and south of the possible room block. Abundant plain gray and a few sherds of San Marcial Black-on-white pottery were observed across the area indicating a probable Early Developmental component.

Area 2 had three cobble concentrations that were interpreted as deflated roasting pits or extramural activity areas. A dense midden deposit was eroding out of the road cut in the central portion of Area 2. Pottery types included Kwahe'e and Santa Fe Black-on-white and abundant plain and corrugated gray ware indicating Late Developmental and Coalition period occupations.

Overall, the site area was initially estimated at 8,100 sq m. Within the right-of-way, approximately 2,100 sq m were investigated through hand and mechanical excavation. Excavation yielded information on 179 cultural features ranging in age from the Early Developmental to Late Coalition or early Classic period.

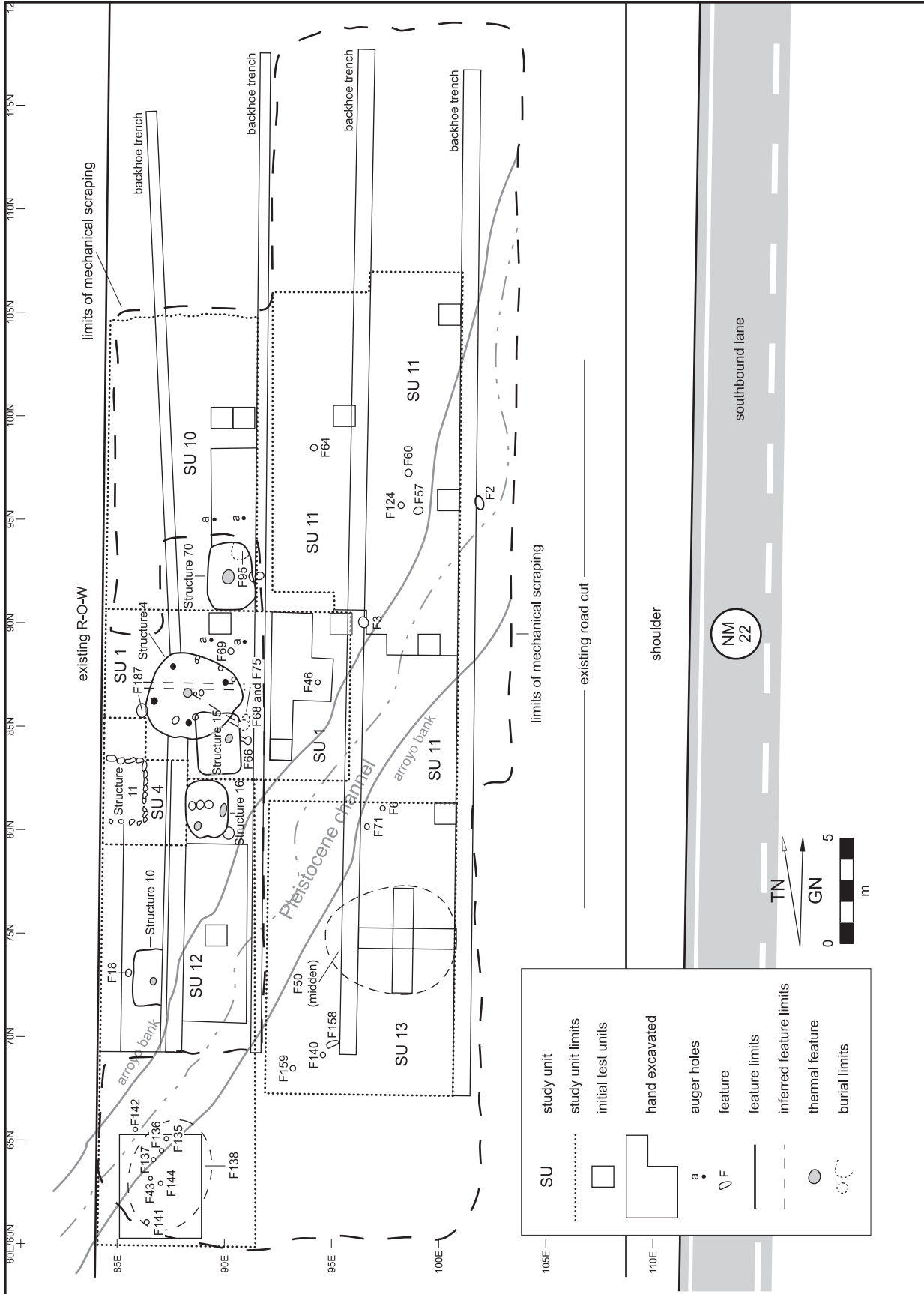


Figure 12.2. Area 1 excavation map.



## GENERAL EXCAVATION STRATEGY

Field work commenced at LA 6169 on May 27, 1998, under the direction of Stephen Post of the Museum of New Mexico, Office of Archaeological Studies (OAS), with six laborers and one field assistant. During the field work, the crew grew to 20 laborers and field assistants with final excavation and recording completed by the site director and eight OAS archaeologists. The initial site grid and surface recording was completed under the direction of Dr. John A. Ware (OAS). Originally budgeted for a 6-week fieldwork effort, excavations at LA 6169 were completed after 13 weeks of intensive excavation and documentation.

The site area to the west of the existing highway centerline was designated Area 1, the site area to the east of the highway was assigned Area 2 (Figs. 12.2, 12.3). Areas 1 and 2 were gridded and surface collected in 4-by-4-m units. A total of 65 4-by-4-m units were collected or examined in Area 1 and 60 units from Area 2, for a total of 125 surface collection units. Artifact counts ranged from 0 to 142; chipped stone artifacts were the most abundant. During the first two weeks, 14 exploratory 1-by-1-m units were excavated in Area 1 and 8 units were excavated in Area 2.

### AREA 1 EXCAVATION METHODS

The 14 units in Area 1 were located in depressions, areas of high artifact density, and near the artifact scatter limit. Excavation revealed cultural deposits 15 cm deep in the north and south extremes of the artifact scatter, 30 to 40 cm deep along the NM 22 road cut, and 60 to 80 cm deep within and near the depressions between 89N and 92E that were eventually recognized as upper levels along the walls of a deep pit structure (Structure 4). Shallow (less than 40 cm thick) and homogeneous (little potential for discernible stratigraphic levels) cultural deposition outside Structure 4 led to backhoe excavation of four north-south oriented trenches.

The trenches were 50 m long from 68N to

118N and were placed at 4 or 5-m intervals along the 87E (BHT 4), 91E (BHT 3), 95E (BHT 2), and 100E (BHT 1) grid lines (Figs. 12.4 and 12.5). The four trenches were excavated through Stratum 1, the geologically recent mixed eolian colluvial sandy loam that contained the bulk of the sheet cultural deposit and into Stratum 2, which was the calcium carbonate and gypsum-impregnated sandy loam that was an ancient colluvium. The trenches also exposed an ancient arroyo or channel deposit that flowed from northeast to southwest. This coarse-grained sandy gravelly Stratum 3 may have restricted feature construction, thereby influencing placement and distribution of features, structures, and activity areas.

Exposed in BHT 1 was an Early Developmental human burial with funerary items (Feature 2) interred in a shallow pit lying on top of Stratum 3. Examination of the trench walls on either side of Feature 2 revealed no other cultural features or deposits in this area.

Exposed in BHT 2 was a Coalition period human burial (Feature 3) interred in a pit dug into transitional soils at the edge of the channel deposit. Feature 3 was at the south limit of a stratigraphic intrusion that was 5 m long from 89N to 94N. The stratigraphic break was lightly charcoal-infused, eolian-deposited fine to medium-grained sand. Hand excavation of a 2-by-5-m area extending from 93N to 97N in 10-cm levels to 30 cm deep revealed a mixed, bioturbated trash deposit of Early Developmental and Coalition ceramics, but no evidence of a structure. The trench walls also exhibited numerous irregularly outlined intrusions that were thought to be unburned pit outlines. However, hand excavation revealed the outlines to be rodent dens and burrows.

No obvious features were exposed in BHT 3, though it was near the east limit of Structure 4. Similar to BHT 2, numerous irregularly outlined intrusions were observed in the trench walls. Hand excavation of a 2-by-5-m area from 94N to 98N to the top of Stratum 2 (20 to 30 cm deep) revealed no distinct outlines. A light scatter of sheet trash was encountered,

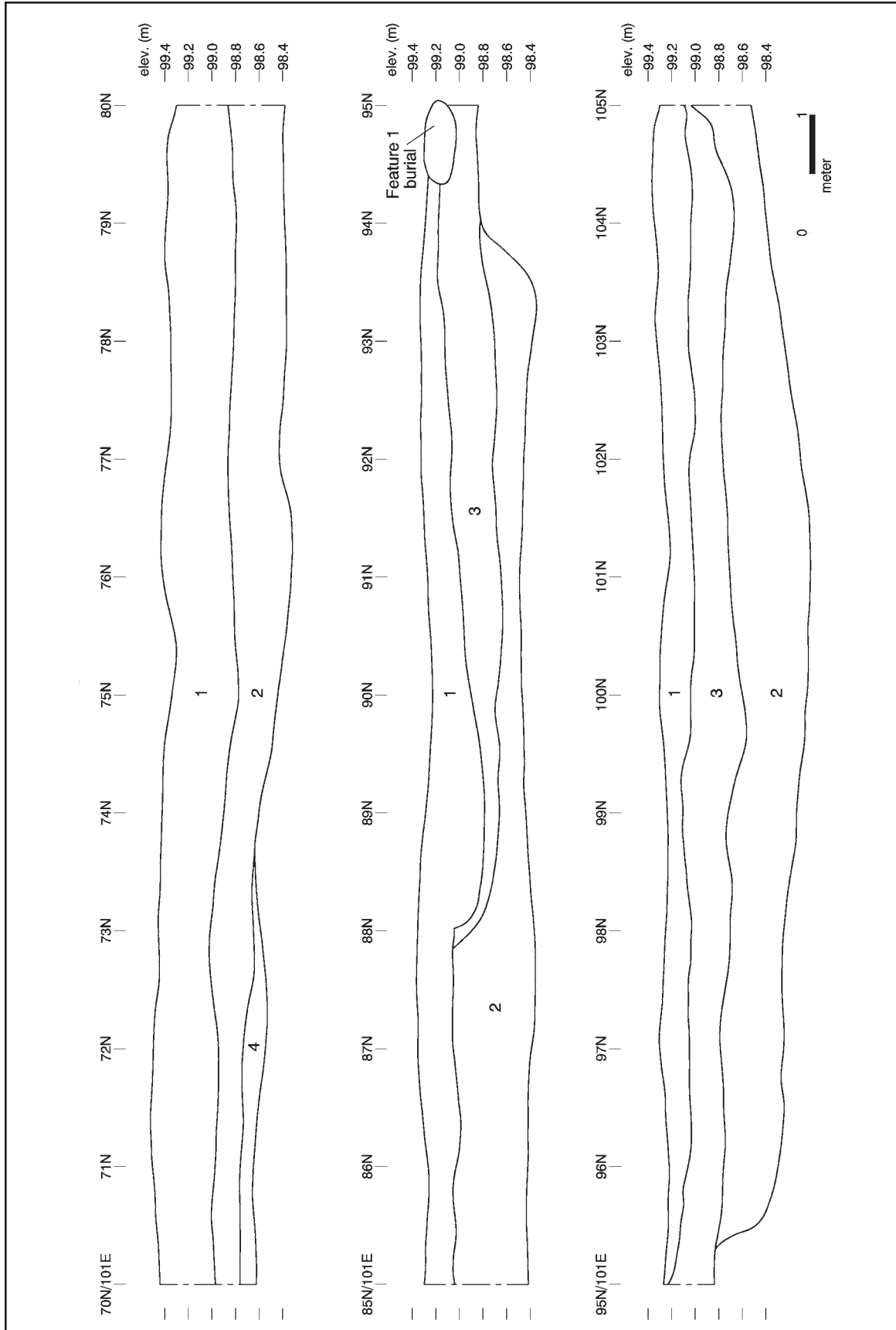


Figure 12.4. LA 6169, Area 1, Backhoe Trench 1, profile.

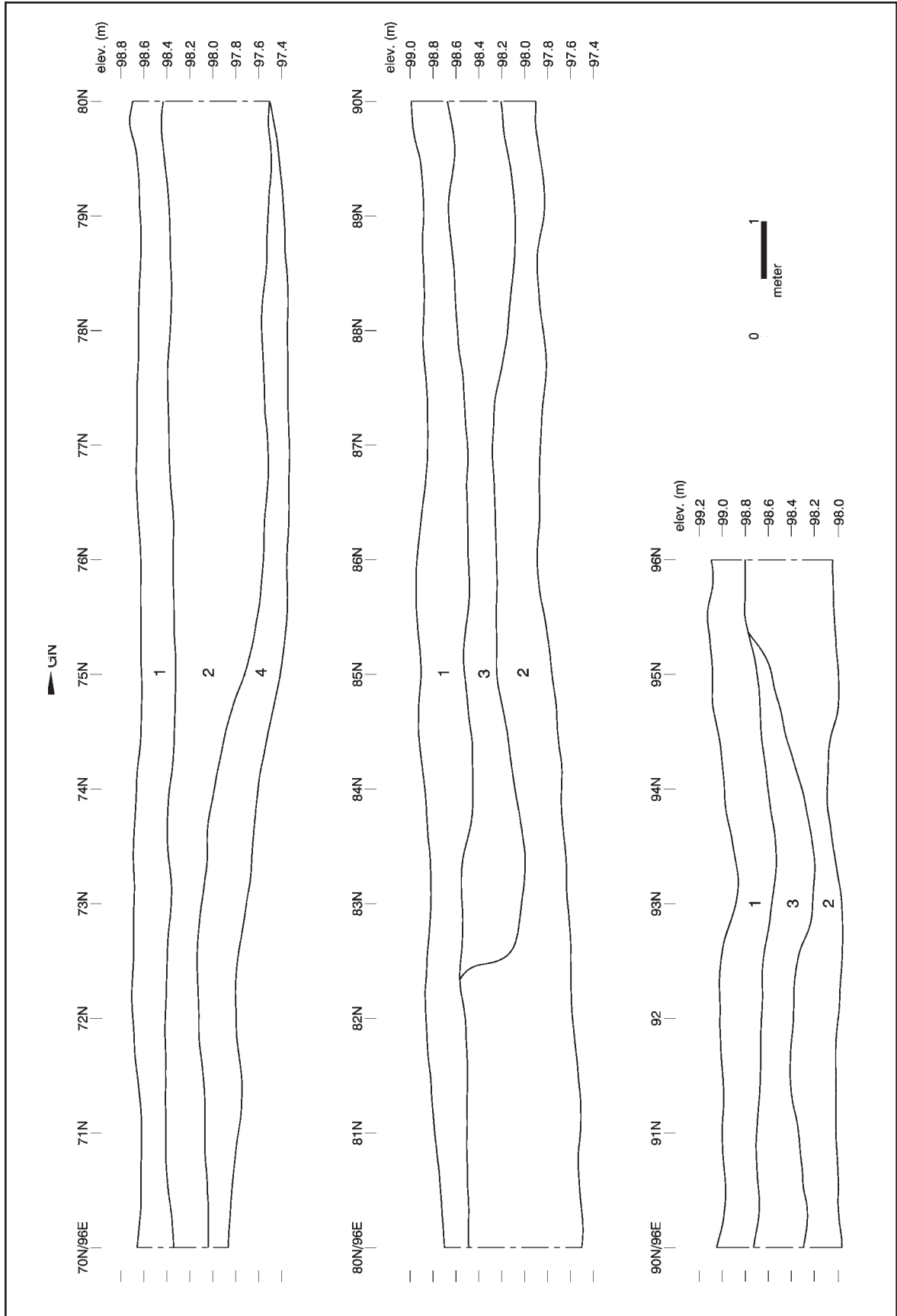


Figure 12. 5. LA 6169, Area 1, Backhoe Trench 2, profile.

but no features. No additional hand excavation was conducted in this area.

BHT 4 bisected Structure 4 from north to south. Another 6-m-long backhoe trench (BHT 5) bisected the pit structure from east to west. The stratigraphy exposed in these trenches guided the subsequent hand excavation. Extension of BHT 4 beyond Structure 4 revealed shallow cultural deposits to the north. To the south of Structure 4, another pit room, Structure 10, was exposed in the west trench wall between 72N and 74N.

Based on surface collection, backhoe excavation, and subsequent feature definition, study units were defined. Study Units 1, 4, 10, 11, 12, and 13 were defined as shown in Figure 12.2. Study Units were arbitrary excavation units that incorporated structures, activity areas, or large mechanically or hand-excavated extramural spaces.

Prior to backhoe excavation within Structure 4, an infant burial (Feature 1) was encountered at the south wall limit 60 cm above the structure floor. The infant was interred in a small pit without funerary items. After backhoe excavation, one or two 1-by-1-m unit control samples were hand excavated to within 20 cm of the floor within each quadrant. The remaining fill was removed without screening to within 40 cm of the floor. Structure and floor fill were excavated in four quadrants and screened through 1/4 and 1/8 inch mesh. De facto, structural or abandonment refuse was piece-plotted. Structure 4 and its floor and wall features were excavated and mapped following standard project protocol.

Highly laminated silt and sand mixed with charcoal and adobe was observed in a 2.4 m gap in the southeast quadrant wall of Structure 4. After stratigraphic recording, excavation of five 1-by-1-m units in 10-cm levels exposed a Coalition period pit room (Structure 15) that was built partly into Structure 4. The pit room floor and wall features were excavated and mapped following standard project protocol. The Structure 4 ventilator exposed in Structure 15's east wall contained an artiodactyl antler. The upper fill of the ventilator shaft housed two juvenile human burials (Features 68 and

75). The burials were excavated and recorded following standard project procedure.

Hand stripping of the 9-by-7-m area between Structures 4 and 10 revealed a third Coalition pit room (Structure 16). The west one-half of the structure was excavated and screened in 20-cm levels to within 15 cm of floor. The east half was removed without screening to the top of floor fill. The floor fill and floor deposits were hand excavated in quadrants and the fill was screened using 1/8-inch mesh. Intramural floor and wall features were excavated and recorded following standard procedures.

Excavation of a 15-sq-m block east of Structures 4 and 15 yielded disarticulated human skeletal remains (Feature 46), but no other cultural features. Excavation below Feature 46 only revealed a diffuse and disturbed low frequency trash deposit. Mechanical blading into Stratum 2 revealed no other cultural features or deposits.

Structure 10 was excavated in 1-by-1-m grids and screened with 1/4 inch mesh in 10-cm levels to the top of floor fill. All floor and floor fill deposits were screened through 1/8 inch mesh and the artifacts were piece-plotted. The extramural area south, east, and north of Structure 10 was surface stripped and excavated in one or two 10 cm levels recovering sheet trash, but exposing no extramural features.

A fourth Coalition period pit room (Structure 70) was exposed north of Structure 4 and excavated in the same manner as Feature 16. An adult human burial (Feature 95) was interred in the floor fill deposit of the structure's northeast quadrant. The burial was excavated and recorded following standard procedures.

The remainder of Area 1 was mechanically stripped to the top of Stratum 2 or the Stratum 1/2 transition removing from 15 to 40 cm of top soil. Mechanical stripping was followed by hand excavation of a 10-cm level within a 16-by-9-m area (Study Units 11 and 13) revealing three extramural features associated with a thin Coalition period trash deposit. A charcoal-infused stain (Feature 50) exposed in Study Unit 13 was cross-trenched for stratigraphic recording and the recovery of a sample of the artifacts. In the southwest site area at the edge



of the terrace, an activity area or ramada structure was evidenced by a cluster of postholes. A 5-by-4-m area was hand stripped and the features were excavated and recorded.

### *Area 2 Excavation Methods*

Area 2 was subdivided into Study Units 6–9 as shown in Figure 12.3. Exploratory and block excavation in Area 2 revealed 11 extramural processing features and exposed the perimeter of the Structure 47/76 superimposed pit structures. Cultural deposit outside Structure 47/76 ranged from 10 cm deep in the 95N area of Study Unit 6 and the 134N area of Study Unit 9 to 20- to 30-cm deep along the road cut between 105N–125N and 128–137E in Study Units 6, 7, and 8. The deepest extramural cultural deposits (Stratum 1) typically yielded between 100 and 300 artifacts per 20-cm level. The highest artifact counts came from the area immediately south of Structure 47/76. The 64 unit sample yielded a wide range of domestic refuse from mostly Late Developmental and Coalition periods.

Exploratory excavations outside the Structure 47/76 area yielded few extramural features. Heavy equipment was used to remove the top 10 to 25 cm of Stratum 1 and expose the Stratum 1/2 occupation surface. A total of 1,360 sq m of Area 2 was scraped exposing 13 extramural features containing ceramics from the Early and Late Developmental and Coalition periods. The 10-by-14-m area that included Structure 47/76 and a 1- to 5-m-wide strip along the east right-of-way fence were not backhoe scraped. The area along the fence was covered with the excavation backdirt piles.

Study Unit 8 contained the superimposed Structure 47 (an Early Developmental period) and Structure 76 (a Late Developmental period) pit structures. Four 1-by-1-m units within Structure 76 were excavated in 20-cm levels to within 40 cm of the pit structure floor. These units were extended, bisecting the structures and exposing seven strata, which were mapped and recorded. A child burial (Feature 49) was exposed along the north wall of Structure 47 during the initial excavation. The remaining upper fill from both structures was hand or backhoe excavated without screening

to within 50 cm of the floor. This unsystematic excavation exposed the outline of Structure 76 (the inner structure) and uncovered a juvenile human burial within Structure 76 (Feature 65). The lower fill and floor fill were removed as quadrants in 10 to 20 cm levels to the floor. An adult burial was exposed in Structure 76 (Feature 82). Structure 47 (the outer structure) was burned and the beam remnants were defined, mapped, and sampled for wood identification and possible dendrochronological analysis. Floor fill and floor artifacts, cobbles, and sample locations were point provenienced. Clearing of the Structure 47 walls exposed a second child burial (Feature 120). Excavation of the structures yielded 38 floor and wall features that were excavated and recorded following standard project protocol.

Excavations at LA 6169 in 1998 failed to identify evidence of architectural or agricultural features described by previous investigators. Final excavation results corresponded poorly with the early site descriptions and only partly coincided with the expectations outlined in the data recovery plan (Ware 1997). Surface collection within the right-of-way revealed artifact density and frequency that was substantially greater than any other Peña Blanca project site. Excavation of the cobble concentration yielded a poorly preserved, remnant adobe and cobble foundation of a Coalition single room structure (Feature 11) at the edge of the west right-of-way (Area 1). Area 1 excavation also uncovered an Early Developmental pit structure, four Coalition pit rooms, extramural surface features from both periods, and eight loci with human skeletal remains. The east side of NM 22 (Area 2) had extensive prehistoric remains as well, including the remains of a burned 6-m-diameter pit structure dating to the AD 800s with a superimposed 4- to 5-m-diameter Late Developmental period pit structure filled with Late Developmental and Coalition period domestic refuse. Two child burials were located in the north wall of the Early Developmental structure and a juvenile and adult were interred in the floor and structure fill of the Late Developmental structure (Feature 76). Extramural features were from Early and Late Developmental and Coalition period occupations.

## *Sampling*

Sampling for LA 6169 was heavily biased in favor of the least disturbed or temporally complex deposits from within structures or extramural areas. Because LA 6169 had three temporally distinct occupations and within those temporally distinct occupations there were multiple occupation episodes, there was a considerable amount of mixed deposits. While it is possible that discard patterns that relate to site activities and subsistence organization may be missed or conflated by focusing on structures and extramural features, they were the least ambiguous contexts available for consideration.

Obviously, sampling for analysis was affected by the excavation sample. In the case of all structures, only a portion of each was excavated from the surface to the structure floor. Excavation units that provide a complete vertical sample of the structure strata were selected for all analyses. In all structures, regardless of period or size, material from floor contact, floor fill, and in some cases, as much as 40 to 60 cm of roof fall and initial structure collapse were selected for analysis. Again, this biases all analyses toward behaviors that were closest to terminal occupation of the structure and those activities that accompanied abandonment, dismantling, and filling.

## GENERAL SITE STRATIGRAPHY

General site stratigraphy was best defined in the backhoe trenches excavated in Area 1 and the hand-excavated trenches excavated in Area 2. No backhoe excavation was conducted in Area 2, but the site surface was mechanically scraped north and south of Study Units 7 and 8.

### *Area 1*

Area 1 stratigraphy is reconstructed from hand-excavated units and the four 50-m-long backhoe trenches. Figures 12.4 to 12.5 (backhoe trenches) are schematic drawings of the backhoe trenches.

Stratum 1 was encountered throughout the excavation area (designated as Unit 1 by

McFadden in this report). It was a 15- to 70-cm-thick layer of brown (7.5YR 5/3, dry) eolian, sandy loam that was slightly charcoal-infused with 1 to 2 percent gravel-size clastic inclusions. It was non-plastic when moistened, and had a weak, blocky structure, and a wavy boundary. Surface collection and surface stripping across the site consistently yielded artifacts from all periods in this uppermost level. Structure 12 was visible as a cobble cluster exposed on the surface and embedded in the more consolidated portion of the stratum. Stratum 1 was exposed in Backhoe Trenches 1, 2, 3, and 4. In Backhoe Trenches 1 and 2 it was found to be deepest between 70N and 80N leading up to the intrusive channel deposit recorded as Stratum 3 (Fig. 12.2).

Stratum 2 was encountered throughout the excavation area in varying thicknesses (designated Units 3 and 4 by McFadden in this report). It was the ancient eolian/colluvium into which most of the cultural features were excavated. It was a 20- to 80-cm-thick brown (7.5YR 5/3, dry) sandy-clay loam with 1 to 2 percent clastic inclusions. The structure is blocky and columnar and is moderately plastic when moistened. It exhibits an undulating or wavy boundary with overlying Stratum 1 and underlying Stratum 3. Calcium carbonate peds and filaments are abundant, and Late Developmental and Coalition period features tended to occur in the transition between Strata 1 and 2. Early Developmental period wall tops were visible in profile in the more stable and well-defined Stratum 2. Except in naturally disturbed areas, cultural deposits and artifacts were limited to feature fill with Stratum 2 forming the walls of most pit features and structures excavated in Area 1. Stratum 2 is deepest in the west-central portion of Area 1 where most of the structures (Features 4, 15, 16, and 70) occurred.

Stratum 3 occurred as a 50-m-long and 5- to 7-m-wide channel that crossed Area 1 from northeast to southwest (designated as a relatively recent alluvial intrusion by McFadden in this report). This poorly consolidated alluvial layer of coarse sand and gravel exhibited inter-tongued lenses of coarse-grained water deposit

soil. Rodent activity in this layer was abundant and cultural features were rarely excavated into this layer but their construction did extend to the edge of the deposit. This was especially evident in Feature 10 where Stratum 3 occurred at 20 cm below the modern ground surface and comprised part of the north and south wall construction. Feature 3 in Study Unit 1, Grids 89–90N/96E was interred into the east boundary of the stratum. Placement of this Coalition period burial at the edge of the old channel suggests that the softer Stratum 3 may have been a preferred choice because of its less consolidated structure. Stratum 3 may have been selected for specialized pits, such as for burial interment, while it was avoided for pit structure construction, placing a spatial limit on their location. In fact, Coalition/early Classic period pit room construction (Feature 15) occurred within Early Developmental period pit structure (Feature 4) indicating that even the loosely consolidated structure fill was preferred to the coarser grained channel deposit.

Stratum 4 was the top of the ancient terrace gravel that underlies the eolian-colluvium deposit (also designated as Unit 5 by McFadden in this report). This gravel deposit is evident in the north and south 5 to 10 m of Backhoe Trenches 1–4. At the south limit of Backhoe Trench 1 it was exposed at 25 cm below the modern ground surface. At the north limit of Backhoe Trench 4 it was exposed at 35 cm below the modern ground surface. Shallow Strata 1 and 2 deposits at or near the terrace edge would have restricted pit structure placement to the central portion of the terrace. Feature 10, in Study Unit 12, appears to be at the southernmost limit of the terrace where there was sufficient depth of deposit. The deepest postholes in Feature 4 revealed Stratum 4 at 1.40 m below the modern ground surface showing the depth of Stratum 1 and Stratum 2 in the central terrace area.

### *Area 2*

Area 2 stratigraphy was less well documented than Area 1 because backhoe trenches were not

excavated into the terrace. Instead, the majority of the excavation area perimeter was mechanically scraped removing Stratum 1 to the top of Stratum 2. Stratum 1 and Stratum 2 were as described for Area 1.

The main difference in Stratum 1 between Area 2 and Area 1 is the high artifact density recovered from the upper 20 cm of Area 2. One hundred to two hundred artifacts were commonly recovered from each hand-excavated 10-m level within the central portion of Area 2, between the 105N and 128N grid lines. Features occurred in the lower levels of Stratum 1 with the most obvious feature definition at the Stratum 2 transition. Artifact densities dropped dramatically with 10 cm of depth into Stratum 2 where the highly compacted sandy-clay-loam yielded 5 to 15 artifacts or a 7 to 30-fold decrease from upper levels. At the north end of Area 2, at 135N, Stratum 1 was 28-cm thick and Stratum 2 appeared abruptly with a decrease in artifacts. Excavation in all exploratory units extended 5 to 10 cm into Stratum 2.

The thickness of Stratum 2 can be extrapolated from Structure 47/76's excavation. The top of Stratum 2 was the old ground surface with the top of Structure 47/76 and extramural features from Early and Late Developmental components exposed by removing Stratum 1. Structure 47/76 was excavated into Stratum 2 for its full depth of 1.25 m. Thus, Stratum 2 within the Structure 47/76 area was 1.25 m thick. Immediately below and exposed in the floor of Structure 47 was Stratum 4, which abruptly terminates Stratum 2.

Stratum 4 was exposed in the floor of the Structure 47/76 pit structure. This gravel terrace deposit defined the vertical limit of the pit structures. Postholes and subfloor pits dug into Stratum 4 had gravelly, unconsolidated, and rough side walls. Structure floors were prepared on top of the gravel, so that where floors were worn or eroded, the gravel protruded through the surface. Heavy gravel deposits were encountered at the southern extent of Area 2 during mechanical scraping. Stratum 4 was estimated to be 15 to 20 cm below the modern ground surface at the terrace margins.

## SITE COMPONENTS

A total of 179 cultural features were excavated at LA 6169. The principal features were habitation structures containing multiple internal features and facilities. Eight structures included two pit structures (Structures 4 [Study Unit 1] and 47 [Study Unit 8]) from the Early Developmental period (AD 750 to 900), one pit structure (Structure 76 [Study Unit 8]) from the Late Developmental period (AD 1000 to 1200) and four pit rooms (Structures 10 [Study Unit 12], 15 [Study Unit 1], 16 [Study Unit 12], and 70 [Study Unit 10]) and the partial footings of two adobe surface rooms (Structure 12) occupied during the Coalition period (AD 1250–1325). In the following section, which is organized by period, each structure will be described with intramural features summarized and most individual descriptive data provided in accompanying tables. Extramural features will be summarized by Study Unit with descriptions provided in accompanying tables. Site level interpretations are offered as necessary.

### *Early Developmental Period Components*

The Early Developmental period occupation is represented by two pit structures and associated surface refuse and extramural pit features. Structure 4 was near the west edge of the right-of-way in the central portion of Area 1. Structure 47 was centrally located within Area 2. Both structures were initially identified by excavation of 1-by-1 or 1-by-2-m exploratory units.

**Structure 4.** Structure 4 was a roughly D-shaped, deep pit structure with 22 intramural features. It measured 4.55 m north-south and 4.82 m east-west with a 0.90 m maximum depth below the prehistoric occupation surface (top of Stratum 2) and a 1.20 m maximum depth below the modern ground surface. It was in the west-central portion of Area 1 (Fig. 12.2). Structure 15, a Coalition period pit room, was built through the southeast wall, destroying the Structure 4 ventilator tunnel. Structure 70, another Coalition period pit room was 2.5 m north of

Structure 4 and the Structure 12 Coalition period surface rooms were 2 m to the southwest. Feature 29 was the only nearby extramural feature from the Early Developmental period.

Excavation revealed no evidence of structural remodeling. The central hearth (Feature 35) was remodeled at least once. Post-abandonment deposits on and immediately above the floor include numerous faunal remains including two articulated dog skeletons, a large mortar or basin-metate, and 300 small to large river cobbles above the hearth. A partial human cranium on the floor (Feature 8) suggests post-abandonment disturbance. Later use of the space occurred with the superpositioning of Structure 15.

Archaeomagnetic samples from the central hearth yielded AD 750 to 850 dates. The floor and floor fill ceramic assemblage is dominated by San Marcial Black-on-white and plain gray utility pottery. These are diagnostic of the Early Developmental period.

There was post-abandonment use of the Structure 4 depression and the ventilator shaft as a mortuary. This use is indicated by the occurrence of a human child burial along the south structure wall (Feature 1) and the interment of two human juvenile skeletons (Features 68 and 75) in the upper fill of the ventilator shaft.

*Excavation Strategy.* Structure 4 was initially defined in grids excavated at the perimeter of the shallow depression recognized during the 1996 inventory (Marshall 1997). Six units were excavated in or just outside the northeast and southwest quadrants as they were subsequently defined. Grids 88N/89E, 84N/87E, and 85N/87E were excavated in 10-cm arbitrary levels to document artifact density and diversity and potential stratigraphy. Grid 84N/87E was excavated to the top of floor fill deposit. Grid 85N/87E was excavated 1 m deep, where an infant burial (Feature 1) was encountered along the south wall. Grid 88N/89E was excavated to 80 cm deep, where a large, shallow pit feature filled with animal bone was encountered as well as the structure wall. The pit structure wall was also identified in profile in Grid 85N/87E. Low artifact fre-

quency combined with no stratigraphic differentiation within Stratum 1 suggested that the pit structure had filled gradually following abandonment and that it had not been used as a refuse dump by later site occupants.

Following hand excavation, two backhoe trenches were excavated across the expected middle of the structure. These trenches allowed for an uninterrupted profile of the structure fill and were useful for defining the structure limits. Examination of backhoe trench walls confirmed the observation that the pit structure had filled gradually, was abandoned systematically, and that it had experienced little or no additional use, except as a cemetery, following the abandonment, until the superpositioning of the later Coalition period pit room, Structure 15. Backhoe trenches defined the floor level (albeit inadvertently) and exposed an isolated human cranium (Feature 8) on the pit structure floor along the west wall.

The pit structure was divided into quadrants based on the projected outline. Backhoe trenches and hand-excavated units had sub-

stantially reduced the volume of fill that needed removal (Fig. 12.6). Upper structure fill, between 65 and 85 cm thick, was removed without screening by quadrant. Quadrants were defined along the 87N and 89E grid lines. This quadrant division was off-set and did not divide the structure into equal portions, rendering comparisons by volume problematic. However, because of the limited amount of refuse and the lack of stratigraphic differentiation, the fill could be examined in thicker, less refined vertical units.

Hand excavation with screening resumed once the upper structure fill was removed. The remaining 20 to 40 cm above floor fill was removed in 20 cm levels and screened through 1/4 inch mesh. The floor fill deposit was screened through 1/8 inch mesh. All artifacts, cobbles, and collected samples from floor fill and floor contact contexts were point-provenienced and mapped. The artifacts and geofacts represent a record that relates to initial abandonment and dismantling of the struc-



Figure 12.6. LA 6169, Structure 4, southwest-southeast quadrants, excavation in progress, facing south.

ture. The floor fill artifacts and geofacts were removed and the remaining 1 to 5 cm of fill was removed and artifacts and geofacts mapped.

Once the floor was cleared, floor features were identified and excavated according to standard project procedures. While defining the southeast wall, an anomalous stratigraphic layer was observed at 40 cm below the modern ground surface. This layer exhibited numerous water-deposited silty clay lenses that filled in a large basin-shaped depression. When further wall-clearing failed to reduce the lenses, excavation from the top revealed that a second pit room had been built into Structure 4, truncating the southeast wall. Unfortunately, this intrusion was not noticed in the Structure 4 fill during the rapid, unsystematic hand excavation. Therefore, there was some intermixing of Structure 15 and Structure 4 deposits. While Structure 4 floor features were excavated, excavation of the Coalition period pit room (Structure 15) was initiated. Final excavation of Structure 4 floor and floor features followed standard project procedures.

*Stratigraphy.* Six strata were recognized within Structure 4. Two strata (1 and 2) are natural layers that occur throughout the site. Five strata (3–7) were specific to Structure 4 and reflect structure filling immediately following abandonment and long-term deposition between AD 850 and AD 1250 and 1300, when Feature 15 was built into the feature fill. Table 12.1 provides descriptions of the seven strata, and Figure 12.7 shows the strata in profile. See Tables 12.2 through 12.4 for the distribution of artifacts within the upper fill (Strata 1–3), roof fall (Stratum 4), and floor fill (Stratum 5).

The upper Strata 1 through 3 have been mixed by post-occupation activities and processes. Intrusion of Structure 15 into Structure 4 introduced a significant amount of disturbance and mixing that was not identified until most of the southeast quadrant had been completely excavated. The result is that ceramics from these strata represent Early Developmental and Coalition occupations (see Table 12.2). Surprisingly, there is a relatively close frequency of Early Developmental and Coalition period sherds from the upper levels.

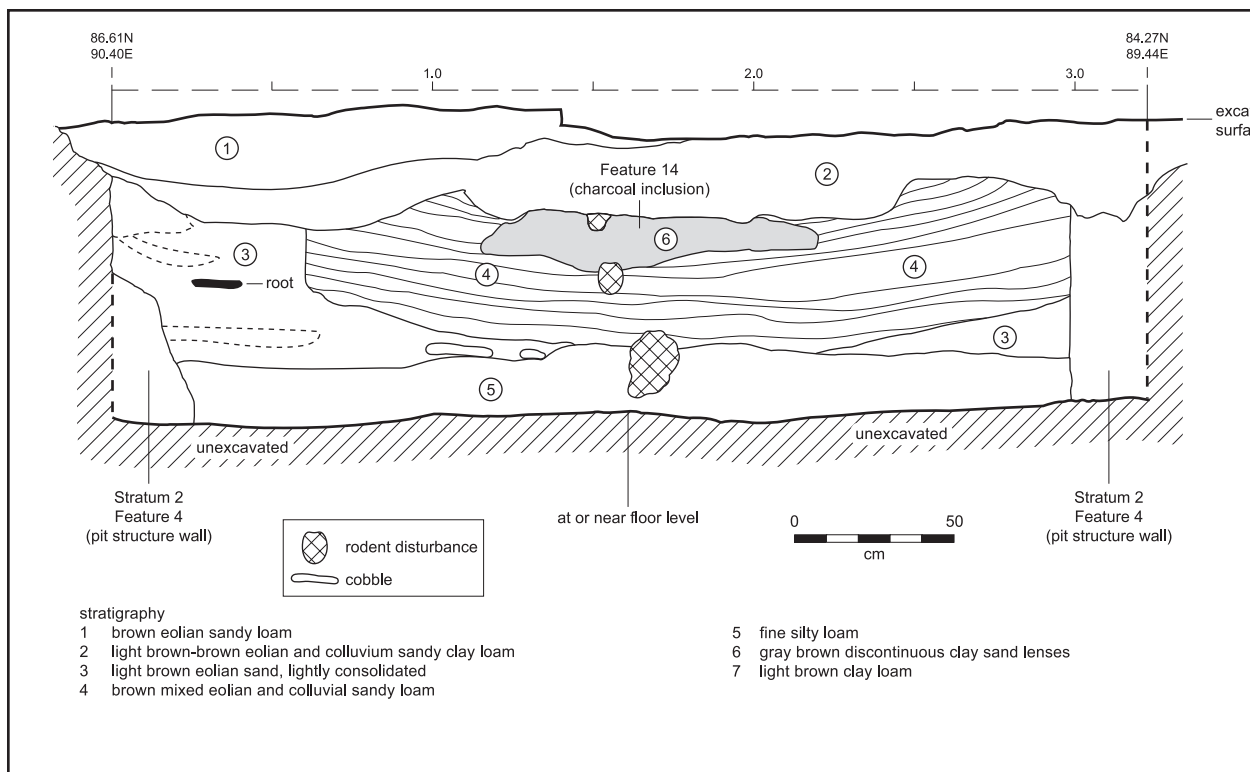


Figure 12.7. LA 6169, Structure 4, stratigraphic profile, south wall of east-west cross section.

This probably reflects the intrusion of Structure 15 into Structure 4 and similar post-abandonment filling processes for both structures. Upper fill and floor fill and roof fall (Strata 4 and 5) have a similar range of faunal species represented, but there are differences in distribution that reflect the different deposition episodes. Surprisingly, fauna occurs in its greatest frequency within Structure 4 in the upper fill, suggesting that there may have been minor episodic refuse disposals.

Stratum 5, which was the roof fall and floor fill deposit, showed few differences in artifact type variability when compared with the upper fill (Strata 1-3). However, there was material type variability between the two stratigraphic contexts, manifested in the higher percentage of andesite/basalt/rhyolite and chert in the upper fill and more obsidian and chalcedony in the roof fall and floor fill (see Tables 12.3 and 12.4). This difference may reflect use of different material source locations during the occupations that followed the abandonment and initial filling of Structure 4. Floor and intramural features yielded higher percentages of andesite/basalt/rhyolite and chalcedony, which is an intermediate proportion of the roof fall and floor fill and upper fill assemblages.

*Description.* Structure 4 was a deep, straight-walled pit structure remnant excavated into native soil. It had a subrectangular to D-shaped outline that measured 4.55 m north-south and 4.82 m east-west with a 0.90 m maximum depth below the prehistoric occupation surface (top of Stratum 2) and a 1.20 m maximum depth below the modern ground surface. Stratigraphy indicates that it was primarily filled by a slow natural process with undisturbed lower and upper fill levels containing artifacts primarily from the Early Developmental period. Uppermost fill and the southeast quadrant contain an Early Developmental-Coalition period mix that results from the superposition of Structure 15 pit room. Intermittent episodes of puddling indicate that the structure was left open after abandonment. A dense layer of cobbles on and immediately above the floor is evidence of

structure dismantling. This cobble concentration was associated with a dog burial and a large basin metate that was lying grinding basin face down (Feature 13). Abundant artifacts on the floor may reflect activity space division within the structure or they may remain as de facto refuse associated with abandonment and site closure. The structure floor area was 17.5 sq m. The structure had 22 intramural features that included four postholes, a central hearth, two other thermal features, seven unburned pits, a wall niche, and a ventilator shaft and tunnel (Figures 12.8, 12.9, 12.10).

Of additional importance are the skeletal remains associated with Structure 4. A cranial case from a human adult male was found on the floor in the southwest quadrant (Feature 8). No other post-cranial elements from this individual were recovered. Two human juvenile burials, aged 5 and 7, were interred in the upper fill of the ventilator shaft (Features 68 and 75). They appear to have died concurrently of unknown causes. A two-month-old infant (Feature 1) was buried near the top of the south wall indicating limited post-abandonment structure use as a mortuary. The burials are described and discussed in more detail in the Human Skeletal Remains (Chapter 22) of this report.

Archaeomagnetic dating was the only source of chronometric dates for Structure 4. Two archaeomagnetic samples were taken; one from the central hearth (Feature 35; Sample No. PB 1154) and one from the associated ash pit (Feature 36; Sample No. PB 1155). Both yielded intercept dates of AD 790 (see Chronometrics, Chapter 15 for more detail). The signal strength from both samples was weak, but they did provide coeval dates. These samples suggest that Structure 4 was occupied sometime during the late eighth to middle ninth centuries AD.

*Construction.* Limited evidence of structure construction was recovered or encountered by excavation. Floor postholes lacked remnant wood and the structure was unburned so that structural elements disintegrated through time or were removed as part of roof and super-

Table 12.1. Structure 4 Stratigraphic Descriptions (Top to Bottom)

Designation	Description	Munsell Color Range	Comments
1	Eolian sandy loam, 20 cm thick	Brown; 7.5YR 5/3 (dry)	Same Stratum 1 as described for general site stratigraphy
2	Eolian and colluvium sandy clay loam	Light brown-brown; 7.5YR 5-6/4, dry	Cultural features excavated into this stratum, top of which approximates the old ground surface; same as Stratum 2, general site stratigraphy
3	Eolian sand, lightly consolidated, loose, blocky structure, nonplastic when moistened, low root penetration	Light brown; 7.5YR 6/4, dry	Upper pit structure fill, 70 cm thick; charcoal visible at 50 cm depth; separated from Stratum 4 by Stratum 5; low artifact density with no evidence of trash-filling episodes
4	Mixed eolian and colluvial sandy loam, loosely consolidated, nonplastic when wet	Brown; 7.5YR 5/3 (dry)	Lower structure fill 10 to 30 cm thick, may include roof fall; greater density of charcoal and artifacts; still primarily a natural deposit
5	Fine silty loam with low pumice, dispersed charcoal and less than 5 percent pea gravel; puddling evident	Light yellowish brown; 10YR 6 dry	Fill mixed with a layer of unburned 10 to 20 cm maximum dimension cobbles; this seems to be closing fill or roof fall
6	Discontinuous clay sand lenses	Gray brown	Fine silty lenses, lightly charcoal-infused; reflect alluvial filling episodes that resulted in puddling
7	Clay loam	Light brown	Inward sloping layer 10-cm thick of wall melt; represents disintegration of upper wall following roof removal and abandonment

structure dismantling. No adobe or plaster were observed in the lower strata from which to suggest the method or quality of wall finishing.

No evidence of formal preparation of the structure walls remained. The eroded or unprepared walls were vertical and abruptly curve inward to meet the floor. Remaining wall heights range from 0.84 m along the east perimeter to 0.95 m along the west perimeter. Walls were in good condition with limited evidence of slumping visible in the stratigraphic profile. Walls were difficult to distinguish from fill because of the similar color and texture, though charcoal and occasional artifacts indicated the difference between structure fill and the wall.

Direct evidence of roof construction was lacking. Adobe clumps recovered from lower levels lacked beam, mat, or grass impressions. No timbers or large wood members were found in the lower fill. Fine silt mixed with cobbles lying on and above the structure floor may remain from roof fill that collapsed when the structure was abandoned and dismantled

(Fig. 12.11). Fifty-eight sherds recovered from floor fill and intermingled with the cobble concentration combined with the 203 sherds recovered from the structure floor indicate that trash may have been deposited into the structure at about the same time it was dismantled. That refuse may have been incorporated into the fill that covered the roof.

The floor was primarily unprepared. The compact floor consisted of the same native soil into which the structure was excavated. Extent of preparation may have been to moisten, smooth, and float the fine particles. The floor was formed directly on top of a gravel layer that may be an ancient terrace deposit. Condition of the floor was patchy and undulating rather than flat and level. The floor at the junction with the wall slopes up rapidly. The floor is slightly basin-shaped with the lowest elevation at the central hearth.

The only evidence of superstructure was the four postholes (Features 28 [northwest], 32 [northeast], 37 [southwest], and 43 [southeast]). Feature 28 was 20 cm deep, Feature 32 was 36



Table 12.2. Distribution of Ceramic Types from Early Developmental Period Structures 4 and 47

	Structure 4, Upper Fill	Structure 4, Roof Fall and Floor Fill	Structure 4, Floor Fill and Floor	Structure 47, Floor	Structure 47, Floor Fill and Roof Fall	Structure 47, Upper Fill
Unpainted (undifferentiated white)	-	-	-	-	1 0.6%	-
Unpainted undifferentiated	17 5.5%	2 3.4%	-	2 1.3%	1 0.6%	1 5
Santa Fe B/w	15 4.9%	-	-	-	-	-
Galisteo B/w	6 1.9%	-	-	-	-	-
Unpainted (Galisteo paste)	2 6.0%	-	-	-	-	-
NRG Unknown rim	-	-	-	1 0.6%	-	-
NRG Plain body	3 1.0%	-	-	2 1.3%	2 1.3%	2 10.0%
NRG Indented Corrugated	-	-	-	-	2 1.3%	-
NRG Plain Corrugated	-	-	-	1 0.6%	1 0.6%	2 10.0%
NRG Smearred Plain Corrugated	-	-	-	-	-	1 5.0%
NRG Mudware	-	-	-	-	2 1.3%	-
MRG Plain rim	5 1.6%	1 1.7%	7 3.4%	6 3.8%	11 7.1%	-
MRG Plain body	160 51.9%	42 72.4%	161 79.3%	129 82.7%	125 80.6%	11 55.0%
MRG Wide Neckbanded (wiped)	1 0.3%	-	-	-	6 3.9%	-
MRG Plain Corrugated	-	1 1.7%	1 0.5%	-	-	1 5.0%
MRG Indented Corrugated	6 1.9%	-	-	-	-	-
MRG Smearred Plain Corrugated	24 7.8%	3 5.2%	2 1.0%	-	-	-
MRG Smearred Indented Corrugated	3 1.0%	-	-	-	-	-
MRG Polished gray	1 0.3%	-	5 2.5%	-	-	-
MRG Unpainted undifferentiated	8 2.6%	-	10 4.9%	1 0.6%	1 0.6%	1 5.0%
MRG Mineral Paint (undiff)	2 0.6%	1 1.7%	3 1.5%	1 0.6%	-	-
Pueblo II (indeterminate mineral)	-	-	-	-	1 0.6%	-
San Marcial B/w	2 0.6%	-	4 2.0%	5 3.2%	1 0.6%	-
Smudged White Paste	-	-	-	-	1 0.6%	-
Slipped Red over white paste (Tallahogan-like)	10 3.2%	6 10.3%	7 3.4%	-	-	-
Slipped over red paste	-	2 3.4%	3 1.5%	-	-	-
Jornada Brown rim	-	-	-	1 0.6%	-	-
Jornada Brown body	-	-	-	1 0.6%	-	1 5.0%
Alma Plain body	-	-	-	6 3.8%	-	-
Total	308 100.0%	58 100.0%	203 100.0%	156 100.0%	155 100.0%	20 100.0%

NRG = Northern Rio Grande; MRG = Middle Rio Grande

Table 12.3. LA 6169, Structure 4, Upper Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		"Other" Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	15	11.5	53	40.8	-	-	3	2.3	58	44.6	-	-	-	-	1	0.8	130	30
Flake	47	17.1	105	38.2	7	2.5	18	6.5	98	35.6	-	-	-	-	-	-	275	63
Flake, Bifacial Thin	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake from Ground Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Flake from Hammerstone	-	-	1	50.0	1	50.0	-	-	-	-	-	-	-	-	-	-	2	<1
Core, Multiplatform	-	-	-	-	-	-	-	-	3	100.0	-	-	-	-	-	-	3	<1
Core, Single Platform	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	2	<1
Angular Debris, Utilized	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	2	<1
Angular Debris, Marginal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	<1
Retouch	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	2	22.2	1	11.1	-	-	2	22.2	4	44.4	-	-	-	-	-	-	9	2
Drill	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Expedient handstone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Total	65	15.1	165	38.3	8	1.9	24	5.6	165	38.3	2	0.5	1	0.2	1	0.2	431	100

Table 12.4. LA 6169, Structure 4, Roof Fall and Floor Fill, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other" Igneous		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	9	28.1	11	34.4	-	-	3	9.4	9	28.1	-	-	32	19.0
Flake	32	31.1	17	16.5	1	1.0	25	24.3	28	27.2	-	-	103	63.0
Flake, Bifacial Thin	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Flake, Sharpening	-	-	-	-	-	-	10	100.0	-	-	-	-	10	6.0
Core, Multiplatform	-	-	2	66.7	-	-	-	-	1	33.3	-	-	3	1.0
Angular Debris, Utilized	1	50.0	-	-	-	-	1	50.0	-	-	-	-	2	1.0
Flake, Utilized	2	66.7	-	-	-	-	1	33.3	-	-	-	-	3	1.0
Flake, Marginal														
Retouch	-	-	-	-	-	-	2	66.7	1	33.3	-	-	3	1.0
Biface	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Uniface	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Drill	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Mortar	-	-	-	-	-	-	-	-	-	-	1	100.0	1	<1
Total	44	27.3	30	18.6	1	0.6	45	28.0	40	24.8	1	0.6	161	100.0

cm deep, Feature 37 was 25 cm deep, and Feature 59 was 20 cm deep. Only Feature 32 was a typical posthole with a wide opening and deep, inward-tapering pit. No wood was recovered from these features and their function was inferred from the roughly equidistant and symmetrical placement relative to the walls and each other. Postholes were spaced 2.2 to 2.6 m apart and were so close to the walls that the superstructure beams would have allowed roof beams to be no more than 2 m long to form an effective, sloped roof. The shallow posthole depth and relative small diameters suggest that the upright posts were modest. Based on Dolores River Project pit structure replication, Wilshusen (1988a:602) estimates that up to 50,000 lb of dirt and vegetal matter would have to be supported. Replication also indicated that the most effective construction would originate at the top of the wall as a series of primary and secondary beams. This construction model would seem to apply to Structure 4 given the absence of a bench or perimeter postholes for additional support.

*Floor and Wall Features.* The structure had 22 intramural features including four postholes, a central hearth, 2 other thermal features, 7 unburned pits, a wall niche, and a ventilator shaft and tunnel. The floor feature data are provided in Table 12.5. The Structure 4 floor plan is shown in Figure 12.8. Features that inform on structure occupation and activities are described in more detail below. Figures

12.12 through 12.20 show plans and profiles and photographs of intramural features.

The central hearth (Feature 35) was partly disturbed by the backhoe excavation. The remaining undisturbed portion of the feature suggested that it had a circular plan with a shallow basin cross-section. The hearth was encircled by an adobe collar or rim that was 8 to 12 cm thick and raised 3 or 4 cm above the floor (Figs. 12.16, 12.17). The collar was lightly oxidized. The interior of the hearth was lined with a thin coating of adobe, which was charcoal-stained and lightly oxidized. The hearth fill was a mix of floor fill (Stratum 5) and charcoal and ash. Charcoal was abundant and include juniper, willow, and saltbush. Two sherds and two animal bone fragments were recovered. They were probably deposited into the hearth at or immediately following abandonment of the pit structure. Below the hearth collar and beyond the basin limit of the hearth was evidence of an earlier hearth. This hearth (Feature 109) was off-set to the northwest by 3 to 8 cm from the Feature 35 south limit. Feature 109 was lightly oxidized and may have had a collar that was removed during remodeling.

Feature 36, the ash pit, may have served both Feature 35 and Feature 109 (Fig. 12.17). It was placed along the southeast margin of the Feature 35 collar, which actually overlapped the ash pit perimeter by 4 cm. The ash pit fill was a silty loam with chunks of charcoal intermixed with ash throughout the fill. Wood char-

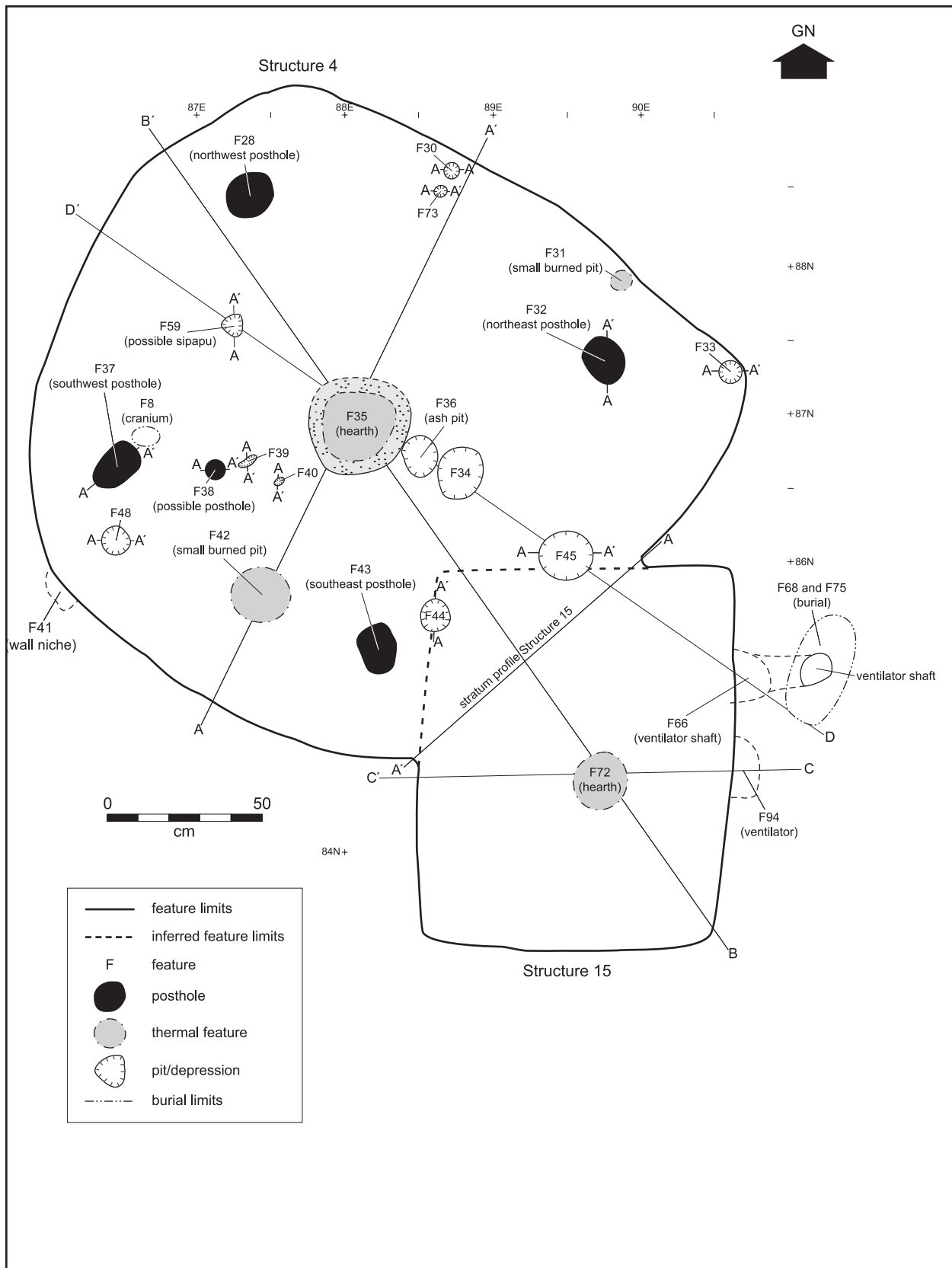


Figure 12.8. LA 6169, Structures 4 and 15, plan view.

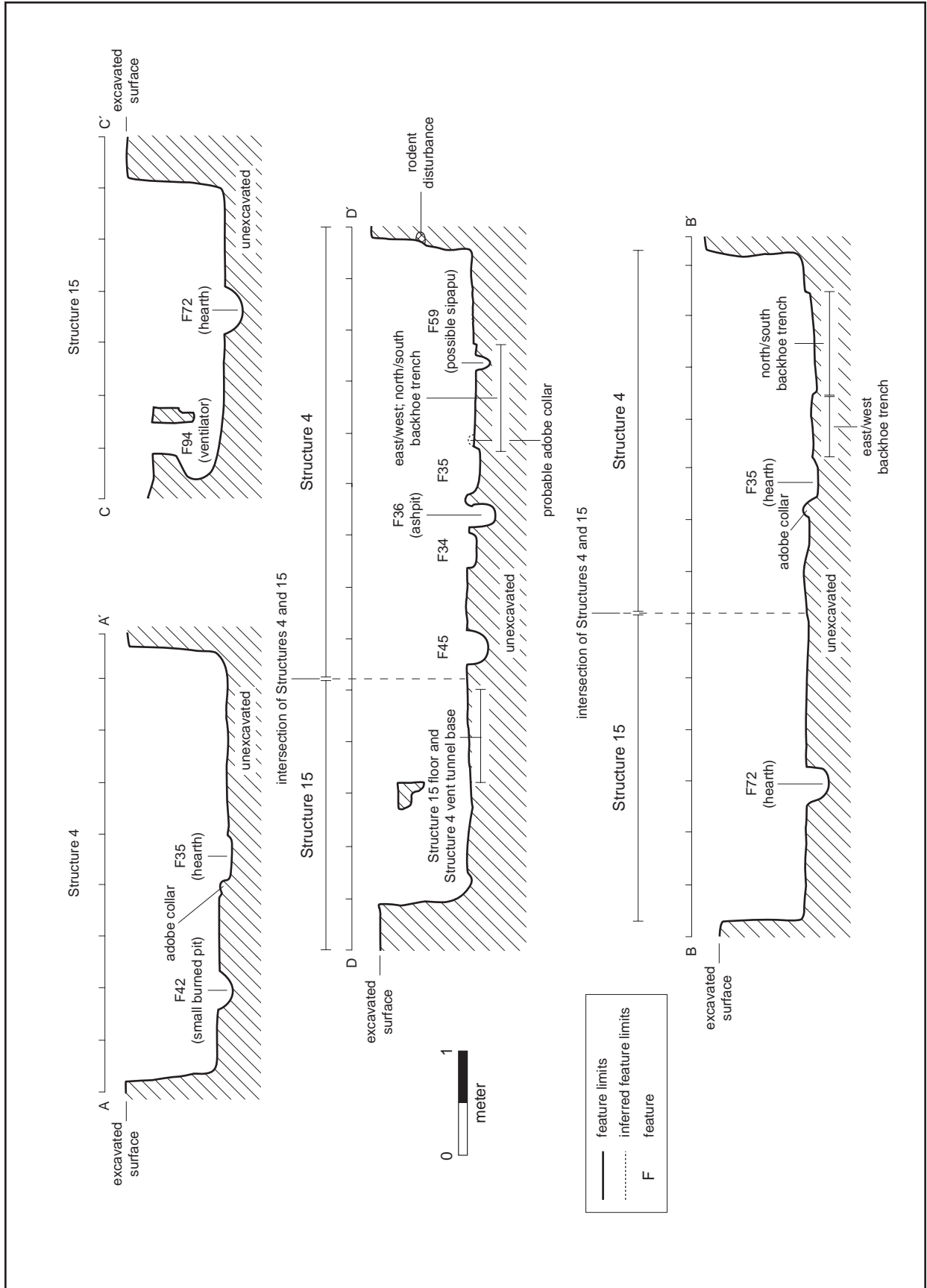


Figure 12.9. LA 6169, Structures 4 and 15, profiles.



Figure 12.10. LA 6169, Structure 4, overview.



Figure 12.11. LA 6169, Structure 4, cobbles on the pithouse floor.

coal recovered from the ash pit included juniper, sage, willow, and saltbush. The interior of the ash pit was oxidized indicating that active coals were placed in the pit. Three sherds, one animal bone, and six pieces of chipped stone were recovered from the fill. Typically, ash pits are receptacles for varying amounts of refuse that was added just before or as part of abandonment.

The four postholes were roughly distributed in a square pattern within the D-shaped structure plan. No wood was recovered from any of the postholes. The diameters of the postholes were roughly equivalent with maximum dimensions ranging between 29 and 34 cm. The main morphological difference between them is that the northwest (Feature 28), southwest (Feature 37), and the southeast (Feature 43) postholes are relatively shallow (20 to 25 cm deep) and have a simple bowl-shaped cross-section. The depth of the postholes is perplexing because they do not appear to have been deep enough to stand on their own. Therefore, they must have been erected and supported until the structure frame was complete and the roof weight stabilized the posts. There are few auxiliary poles and no evidence of superstructural remodeling that would suggest that this design failed and was replaced. Instead it appears to have held for the life of the structure. The northeast posthole (Feature 32) was more typical of postholes found in other Early Developmental period pit structures. It exhibited a bilevel cross-section that was wider at the top and tapered to the bottom. The 36-cm depth provided a more stable support.

Feature 42, a thermal pit with a large cobble on the base and numerous fire-cracked fragments in the fill, may be the only cooking feature within the structure (Figs. 12.14, 12.15). The feature is shallow and of a suitable size for a single medium-sized 20- to 25-cm diameter cooking pot. The pot would have been placed on the cobble and fuel could have been added around the sides as necessary. Adding fuel around the feature periphery may have contributed to the oxidized rind that was present.

Charcoal recovered from the hearth was juniper and willow, reflecting local terrace and floodplain sources.

Floor features are arranged dividing the pit structure floor into open space and "work or activity" space. Figure 12.8 shows the plan view of the pit structure floor with the larger, non-posthole features in the south-half and only scattered, small or shallow features in the north-half, as defined by the east-west axis through the central hearth. In the south-half there is one small cobble-filled thermal pit (Feature 42) and three unburned sand-filled pits (Features 44, 45, and 48). These floor pits are roughly equally spaced at 1.5 m intervals in an arc that parallels the south wall 1.25 to 1.5 m distant.

The central hearth and ash pit are on an axis with a shallow sand-filled pit (Feature 59) 1.2 m northwest of the central hearth, an interior sand-filled pit (Feature 34), one of the perimeter sand-filled pits (Feature 45), and the ventilator tunnel (Feature 66). These six features are at a 90 degree angle to the four posthole axes and aligned at 115 degrees east of magnetic north. East and southeast structure/feature orientations are the common floor plan in the Middle Rio Grande Valley (Frisbie 1967; Schmader 1994b). One of the small pit features north of the hearth may be a sipapu.

The only wall feature was a niche (Feature 41) in the southeast wall (Figs. 12.12, 12.13). It exhibited three strata. The upper 5 to 10 cm were a dark grayish brown (10YR 4/2) silty loam mixed with clay, charcoal, and pumice. The next 40 cm was analogous to Stratum 5. The deepest 5 cm was a brown (10YR 5/4) fine, silty water-deposited clay that filled the bottom of the niche. Wall niches are common in pit structures, but were relatively rare for the Peña Blanca sites. No material remains were recovered that would lend to an interpretation of the feature function. It was the only "storage" feature found in Structure 4. Its use could have been specialized, since it did not have a large storage capacity. The niche was one-third taller than wide and was only dug 20 cm below the structure floor. It seems more suited to storing items in an upright position than for

Table 12.5. LA 6169, Features Associated with Structure 4

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
1	Infant burial	SW Quad, along southwest wall		Interred in the upper fill, Stratum 3, along the southwest wall	Interred in the naturally deposited Stratum 3; appeared to be in a small oval-shaped pit; no associated burial goods; post-abandonment of Structure 4
8	Human cranium on floor	SW Quad	N/A	Placed on floor; covered with Stratum 5	No postcranial skeletal elements were recovered from structure floor suggesting deposition at abandonment
13	Cobble concentration with two articulated canids in floor fill	Center of pit structure above the floor	150 x 105 x 36	Light yellowish brown (10YR 6/4) silty loam with low pumice, dispersed charcoal and less than 5 percent pea gravel; puddling evident	Clustering of cobbles and canid skeletal remains in floor fill suggest ritual reuse of pit structure soon after abandonment; rock concentration may be a combination of collapsed roofing and burial structure
28	Northwest posthole (Fig. 12.12)	NW Quad	30 x 27 x 20	Stratum 5; two small cobbles	Excavated into underlying gravel terrace
30	Small pit (Fig. 12.20)	NE Quad	16 x 16 x 10	Upper 5 cm was grayish brown (10YR 5/2) charcoal and ash mixed with oxidized clay and animal bone; lower 5 cm charcoal, ash, and oxidized clay	Basin-shaped depression may have been a pot rest or holding pit; no artifacts and only redeposited fill
31	Small burned pit (Fig. 12.12)	NE Quad	19 x 13 x 6	Stratum 5	Shallow depression containing lightly oxidized adobe clods; charcoal-stained under the clods indicates the pit was used with fire; clods may be pot rests within a warming pit
32	Northeast posthole (Fig. 12.12)	NE Quad	34 x 23 x 36	Dark yellowish brown (10YR 4/4) fine sandy loam mixed with charcoal flecks	Posthole excavated to the top of underlying gravel terrace
33	Small pit (Fig. 12.12)	NE Quad	16 x 15 x 4	Yellowish brown (10YR 5/4) consolidated clay loam	Basin-shaped pit lacking cultural material; presence of consolidated clay suggests that it was sealed
34	Small pit	SE Quad	33 x 30 x 5	Stratum 5	Shallow, basin-shaped pit associated with a cluster of 12 plain gray jar sherds; may have been a pot rest of temporary storage facility
35	Hearth	Center of pit structure	49 x 45 x 13 (int) 69 x 69 (ext)	See text	Basin-shaped with one apparent remodeling episode; fill lacks heavy charcoal staining or ash; no artifacts recovered; small and shallow indicating a small capacity for cooking or heating
36	Ash pit	SE Quad	26 x 26 x 26	See text	South of Feature 35 filled with charcoal-infused ash with initial construction and use of main hearth; hearth collar is built over the edge of the ash pit; low frequencies of sherds, chipped stone, and animal bone were recovered
37	Southwest posthole (Fig. 12.12)	SW Quad	29 x 25 x 25	Stratum 5; 3 animal bones, 3 lithic artifacts	Excavated to the top of the underlying gravel terrace
38	Possible posthole (Fig. 12.12)	SW Quad	13 x 13 x 28	Stratum 5	Narrow diameter, steep-sided pit; possible loom or ladder support hole or secondary posthole
39	Small pits (Fig. 12.12)	SW Quad	13 x 7 x 5; 5 x 5	9 Pale brown (10YR 6/3) silty loam mixed with charcoal and ash, but not burned	Bifurcated depression located west of the hearth; may be pole or rack supports
40	Divot (Fig. 12.12)	SW Quad	7 x 5 x 5	Pale brown (10YR 6/3) silty loam mixed with charcoal and ash, but not burned	Basin shaped and sand filled
41	Wall niche (Figs. 12.12, 12.13)	SW Quad	55 x 37 x 20	See text	Within the southwest wall
42	Small burned pit (Figs. 12.15)	SW Quad	7 x 34 x 13	Brownish gray (10YR 6/2) silty loam with dispersed charcoal flecks	Small, cobbled and burned pit; oxidized halo surrounding edge of the feature; large cobble in the bottom with fire-cracked cobbles in the fill



Table 12.5. Continued.

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
43	Southeast posthole (Fig. 12.15)	SE Quad	33 x 24 x 20	Stratum 5	Lower 9 cm cobble or gravel lined
44	Small pit (Fig. 12.15)	SE Quad	25 x 18 x 10	Light brownish gray (10YR 6/2) fine-grained clayey sand, possibly intentionally filled	Small, unburned pit with redeposited fill; basin-shaped with gently sloped sides and a regular bottom
45	Small pit (Fig. 12.15)	SE Quad	36 x 34 x 19	Stratum 5	Steep walled pit with no evidence of burning; contains mix of post-abandonment fill and roof fall
48	Small pit (Fig. 12.15)	SW Quad	21 x 20 x 7	Stratum 5	Shallow unburned pit; basin-shaped and lacking evidence of burning; may be a pot rest
59	Small pit (possible sipapu) (Fig. 12.15)	NW Quad	15 x 12 x 12	Pale brown (10YR 6/3) medium to coarse sand, may have been intentionally filled	Possible loom support, two bone shuttles were recovered from same area; it is on a line with the hearth, ash pit, and ventilator, suggesting it may be a sipapu
66	Ventilator shaft	85N/91E	109 x 94 x 92		Ventilator tunnel was removed by F. 15 construction; two human burials in upper fill of vent shaft (F. 68, 75); antler fragment in lower portion of vent shaft
68	Human burial	84N/92E	N/A		Interred in upper fill of Feature 66
73	Small pit (Fig. 12.15)	NE Quad	8 x 7 x 4	Stratum 5	
75	Human burial	85N/91E	N/A		Interred in upper fill of Feature 66, facing Feature 68
87	Feature 68 and 75, burial pit	85N/91E	95 x 93 x 41		Burial pit superimposed on top of Feature 66 ventilator shaft for Feature 4
109	Hearth	Center of pit structure	16 x 59 x 5	Reddish yellow (7.5YR 6/6) silty loam	Hearth basin below Feature 35, evidence for remodeling of central hearth

bulk storage of loose foodstuffs. A pollen sample revealed no unusually high concentrations of economic or medicinal plant species (see Holloway's pollen analysis, Chapter 24).

A second wall feature would have been the ventilator tunnel. The tunnel was removed by the construction of Structure 15 pit room. This left the ventilator shaft and a 20- to 40-cm-long tunnel remnant in the east wall of Structure 15 (Fig. 12.18). The ventilator shaft (Feature 65) may have been intentionally filled after the abandonment of Structure 4. This observation is partly based on the occurrence of an artiodactyl horn at the shaft/tunnel junction. The antler was suspended in fill that was mixed with chipped stone and Early Developmental period sherds. The placement of antler in the ventilator tunnel suggests ritualized behavior associated with structure closing and abandonment (Fig. 12.19). Another line of evidence that indicates a different filling episode for the ventilator shaft is the higher frequency of artiodactyl and rabbit bone than was found on the floor and in the floor fill of Structure 4, and the

absence of turkey and dog in the ventilator shaft.

Interred in the upper fill of the ventilator shaft were two human juveniles (Features 68 and 75). These individuals were interred in a circular pit (Feature 87) that was excavated into the soft fill of the ventilator shaft (Feature 65). Feature 87 measured 95 cm in diameter and was an estimated 46 cm deep. The pit may have been reduced by mechanical scraping of Strata 1 and 2. The pit fill contained numerous disarticulated skeletal elements from the two juveniles. These elements were spread by post-interment rodent disturbance. The loose fill of the ventilator shaft and burial pit were heavily rodent intruded.

The two juveniles were aged five and seven years old. Their sex could not be determined. The juveniles were placed one (Feature 75) on top of the other (Feature 68) in semi-flexed positions. Their crania were oriented on a north-to-south axis. No grave offerings or burial goods were recovered with these individuals. More information on each burial is provided in

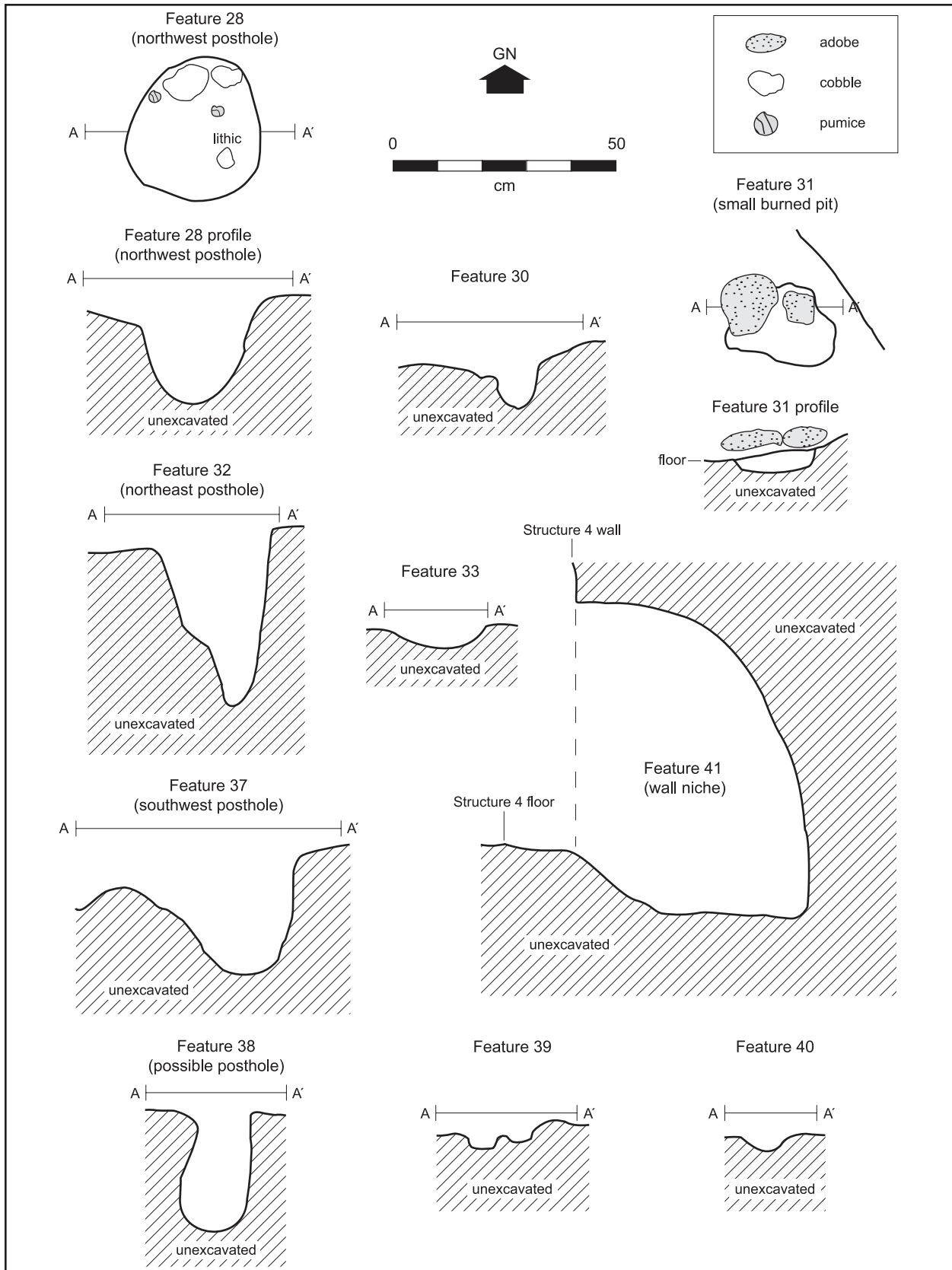


Figure 12.12. Structure 4 floor features: (a) Feature 28; (b) Feature 30; (c) Feature 31; (d) Feature 32; (e) Feature 33; (f) Feature 37; (g) Feature 38; (h) Feature 39; (i) Feature 40; (j) Feature 41.



Figure 12.13. LA 6169, Structure 4, Feature 41.



Figure 12.14. LA 6169, Structure 4, Feature 42.

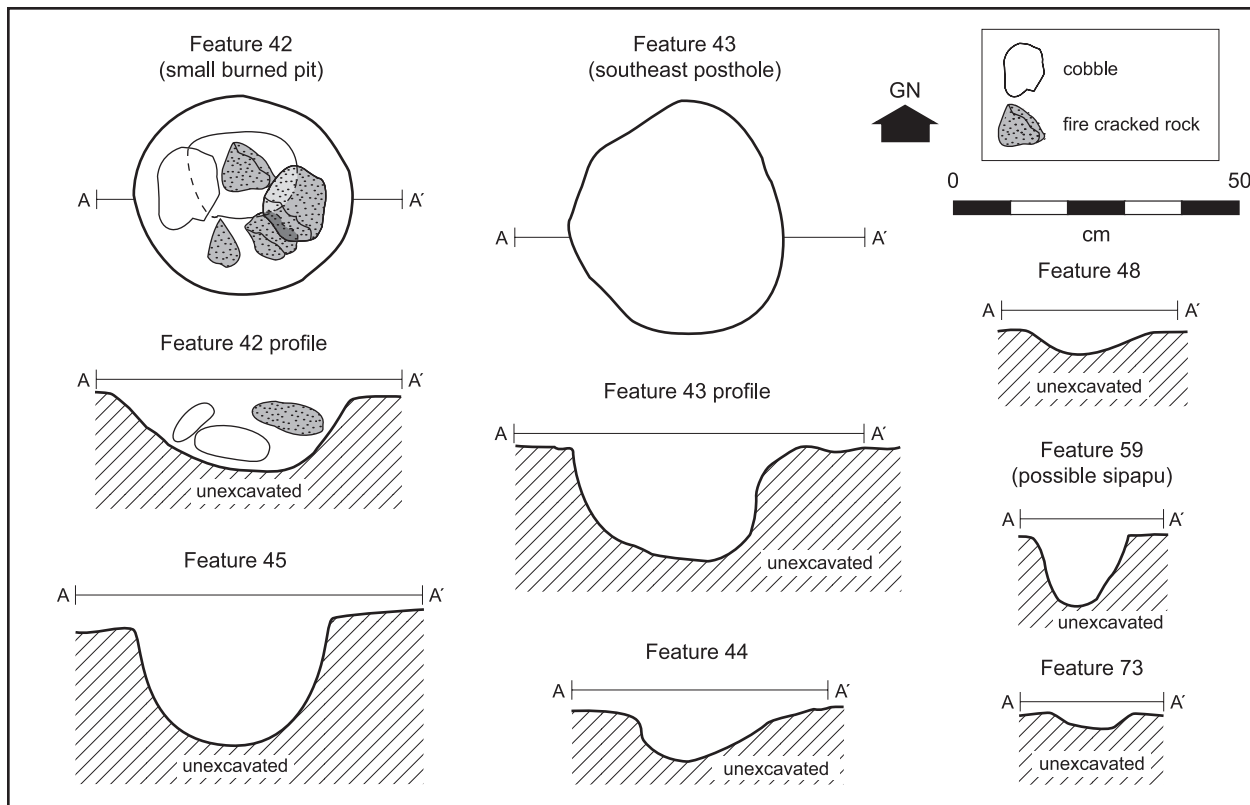


Figure 12.15. LA 6169, Structure 4, floor features: (a) Feature 42; (b) Feature 43; (c) Feature 44; (d) Feature 45; (e) Feature 48; (f) Feature 59; (g) Feature 73.

#### Human Skeletal Remains (Akins, Chapter 22).

Also interred in the upper fill of Structure 4 was an infant burial that was exposed before the pit structure was defined. Feature 1 was exposed 60 cm below the top of the Structure 4 south wall. No burial pit was evident and the infant was interred into an area measuring 20 cm north-south by 15 cm east-west. The orientation was to the west and the infant appeared to be lying on its left side. There were no associated grave goods.

Another feature that was not actually a wall or floor feature, but is important within Structure 4 was Feature 13. Feature 13 was a cluster of cobbles, artifacts, and two articulated dog skeletons in the floor fill (Fig. 12.20). This cluster of material, roofing debris, and dog skeletons covered a 140 cm east-west by 90 cm north-south area. The two dogs were partly buried under debris consisting of cobbles, a large ground stone mortar, and sandy loam. The cobbles may have been integrated into the roof construction (as suggested by cobble

impression found in roof adobe at LA 6170). It is less likely that the mortar rested on the roof and more probable that it was deposited into the structure, when the roof was demolished or collapsed. The dog skeletons were lying side-by-side. The northernmost individual was lying on its right side with flexed limbs. The southernmost individual was lying on its left side with flexed limbs. The dogs appeared to be interred as judged by the excavator. To the southwest of the dogs was a cluster of turkey long bones and to the north of the dog skeletons was a toad skeleton. Feature 13 is 3 to 9 cm above the structure floor suggesting that dogs, turkeys, and other items were deposited after abandonment. The concentration of these items near the center of the structure indicates intentional placement or mounding. Roofing material on top of Feature 13 suggests that these interments occurred immediately before the roof was fully dismantled and collapsed.

*The Artifact Assemblage.* Primarily lithic artifacts, pottery, and faunal remains were

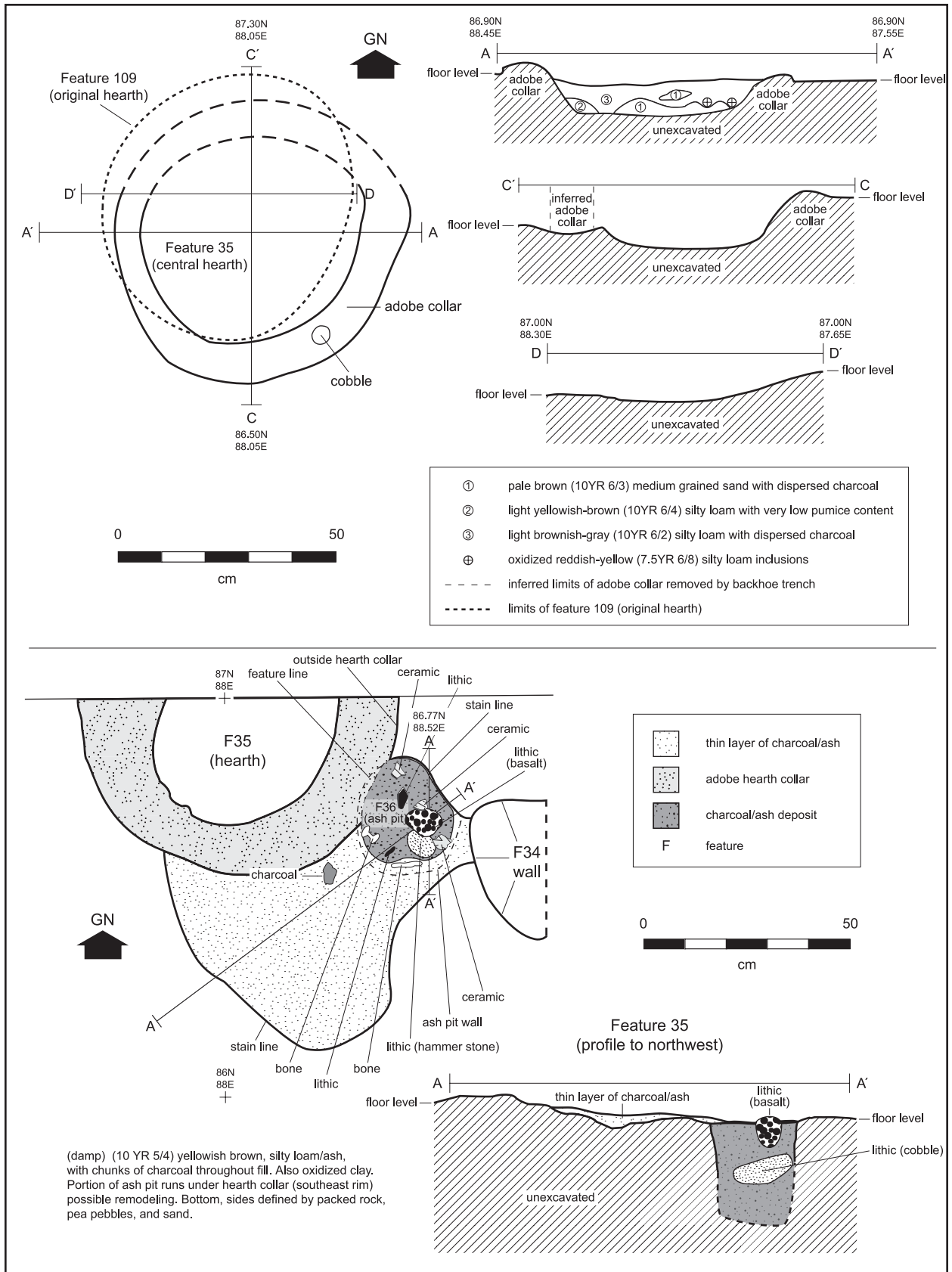


Figure 12.16. LA 6169, Structure 4, Features 35 and 36, plan and profile.

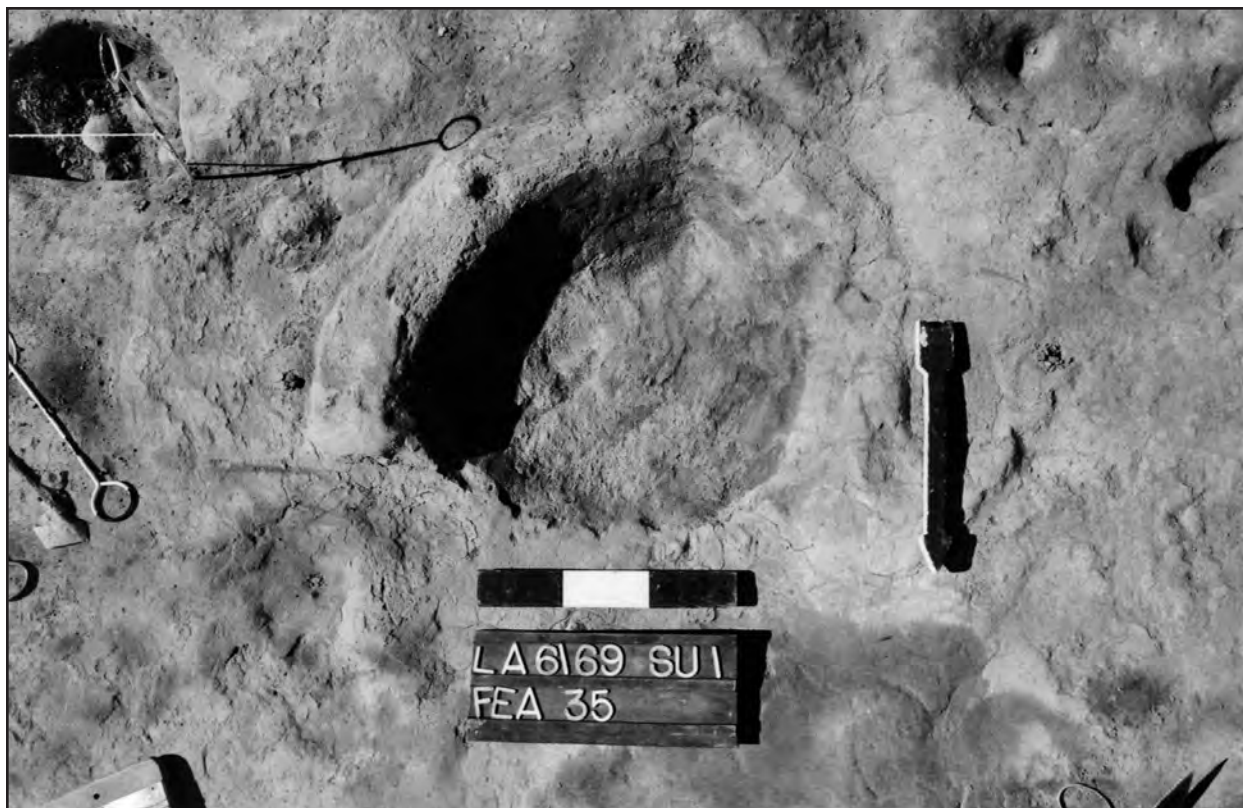


Figure 12.17. LA 6169, Feature 35.

recovered from Structure 4. These different artifact classes occurred in variable frequencies from the upper structure fill (Strata 1-3), roof fall and floor fill, and floor and intramural feature contexts. Different artifact classes are summarized individually by context.

Upper fill (Strata 1-3) and roof fall and floor fill (Strata 4 and 5) clearly remain from post-abandonment site activities. The artifacts and subsistence remains from these different stratigraphic contexts can be interpreted in multiple ways relating to social, economic, and demographic behaviors.

One activity that is represented by the roof fall and floor fill was structure dismantling and the deposit of a dense concentration of cobbles, artifacts, two dog carcasses, and the disposition of a disarticulated turkey carcass, either through human or animal agent. This debris comprised the roof fall and floor fill and reflects what site occupants considered appropriate for leaving or placing in the structure upon collapsing the roof. These items, artifacts and subsistence debris, reflect social and economic activities and behaviors of the people

that lived on the site after Structure 4 was abandoned. These people could have been biologically or socially related, although it could be not be determined which is more possible from the human or material remains from Structure 4 post-abandonment fill or from Structure 47 occupation, which is roughly contemporaneous.

The 58 sherds recovered from roof fall and floor fill represent an Early Developmental component (Table 12.2). Middle Rio Grande Plain body sherds from jars predominate, which is true for Structure 4 floor contact and intramural assemblages and for the lower strata of Structure 47. Pottery frequency is low relative to upper fill and floor contact and floor features, indicating that domestic refuse dumping immediately after abandonment was small-scale and was short-lived.

One hundred and sixty-one lithic artifacts were recovered from the roof fall and floor fill in Feature 4 (Table 12.4). The majority of these artifacts were manufactured from Jemez obsidian (28 percent), chalcedony (27 percent), non-vesicular igneous materials (25 percent), and

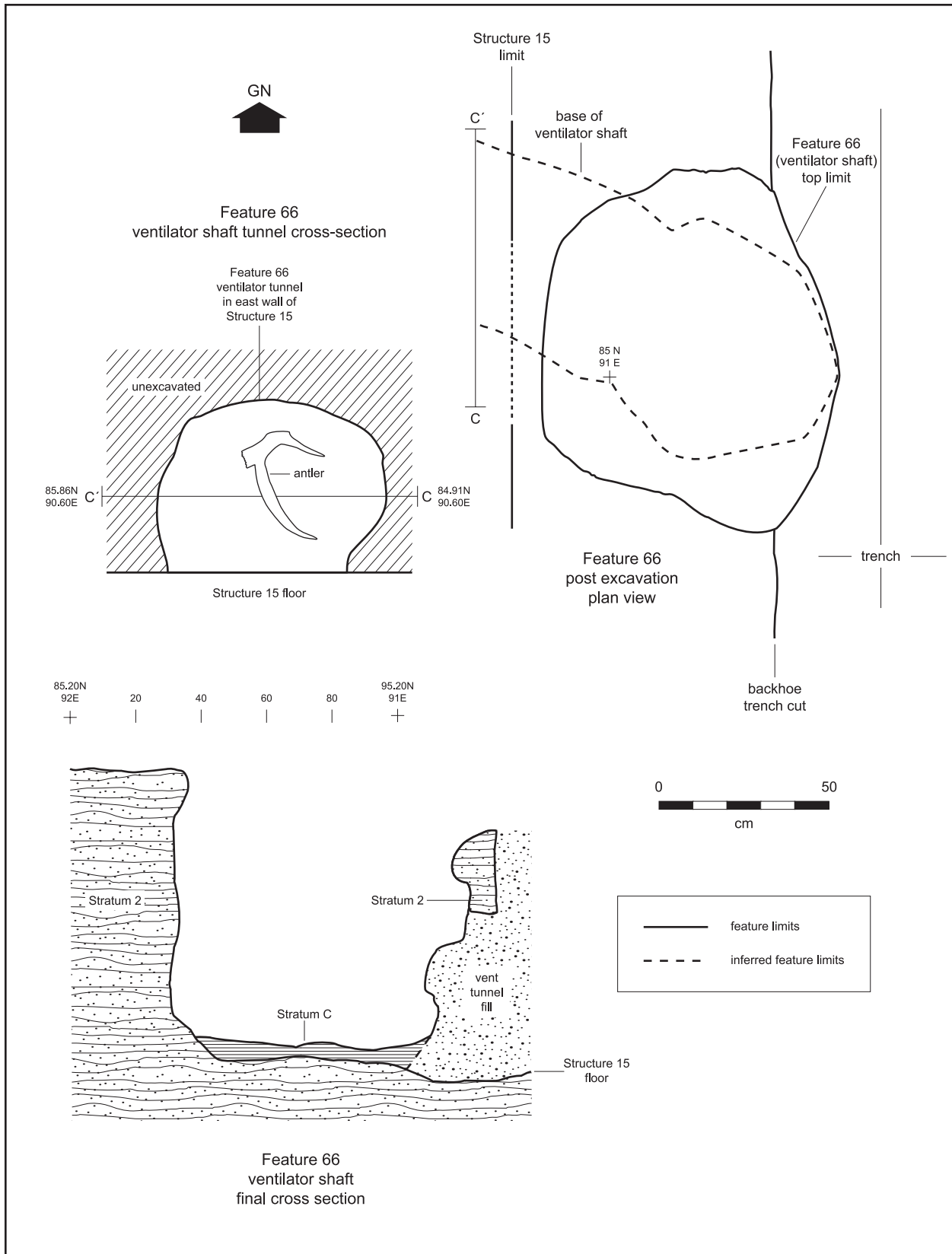


Figure 12.18. LA 6169, Structure 4, Feature 66, ventilator shaft and tunnel, plan and profile.



Figure 12.19. LA 6169, Feature 66, ventilator tunnel. Note antler in shaft.

chert (19 percent). Quartzite and "other" igneous material categories were each represented by a single artifact. Obsidian occurs in much higher percentage in the roof fall and floor fill than the floor, perhaps reflecting a more typical discard of domestic and subsistence-related trash deposit.

The roof fall and floor fill assemblage indicates an emphasis on later stages of core reduction. Seventy-five percent of the whole flakes lack dorsal cortex. Only eight flakes had partial dorsal cortex and no primary decortication flakes were recovered. Within the Jemez obsidian material category one bifacial thinning flake and ten resharpening flakes indicate that at least one obsidian tool was resharpened within the structure. Three multiplatform cores were also recovered from the provenience.

Unutilized flakes (63 percent) and unutilized small angular debris (19 percent) constitute the majority of the assemblage. Tools include five utilized flakes and pieces of small angular debris, manufactured from chalcodony (n = 4) and obsidian (n = 1); three mar-

ginally retouched flakes made from obsidian (n = 2) and nonvesicular igneous material (n = 1); obsidian bifaces (n = 2); and a nonvesicular igneous uniface. All the utilized flakes and angular debris exhibit complete functional edges and unidirectional wear resulting from scraping on hard media like bone or wood. Two of the flakes with marginal retouch lack evidence of utilization when examined using 60x magnification. Both, however, exhibit complete functional edges so it is likely that they were utilized. The third tool exhibits unidirectional retouch and wear typical of scraping on hard media like bone or wood. It is likely these tools were utilized and discarded in the structure. Two obsidian biface fragments and a complete uniface were also recovered. The bifaces did not exhibit complete functional edges. The uniface lacked evidence of use wear using 60x magnification but exhibited a complete functional edge. It is likely this tool was utilized and discarded.

A mortar, manufactured from scoria, was also recovered. This mortar was located near



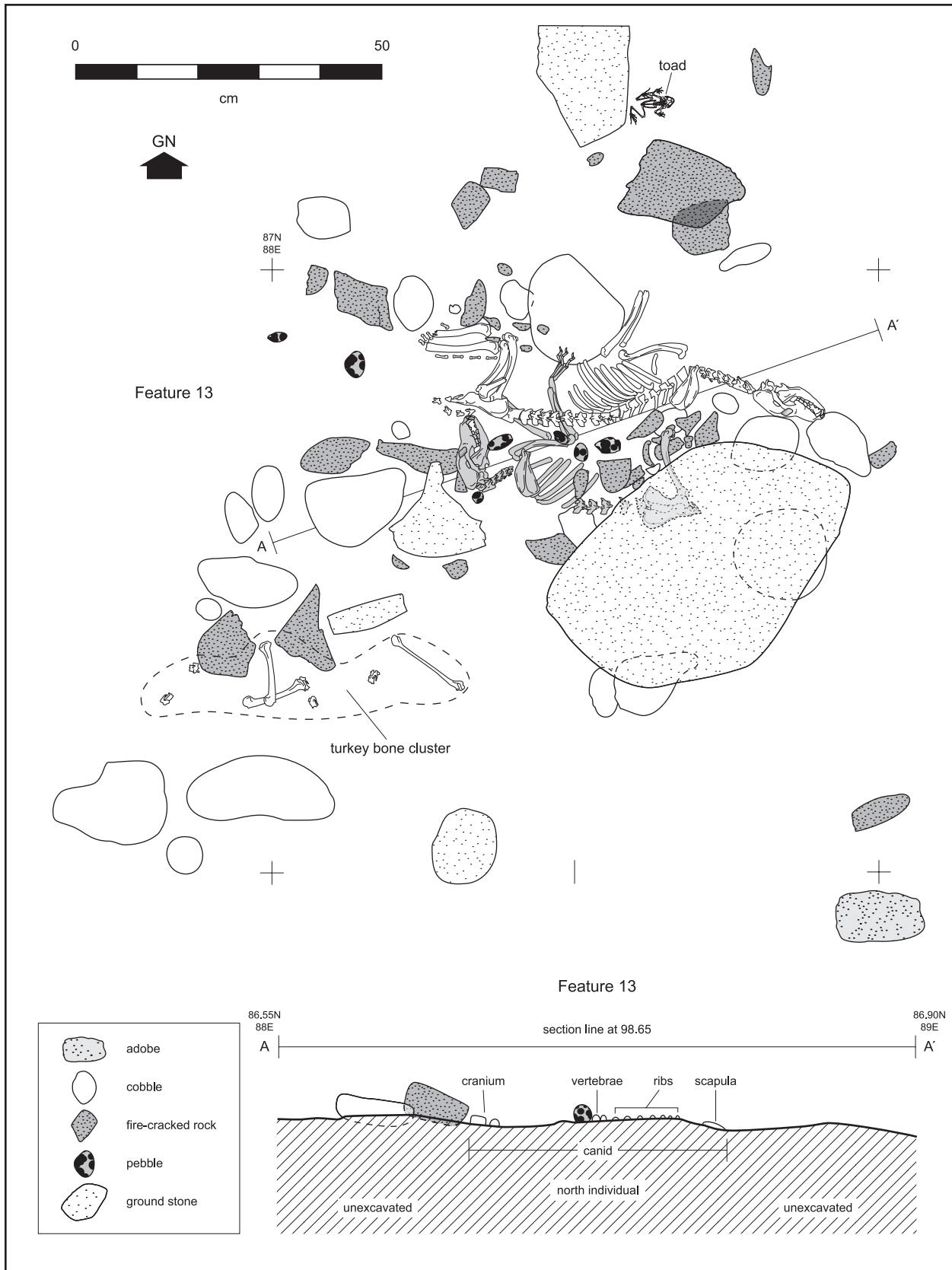


Figure 12.20. LA 6169, Structure 4, Feature 13, plan view.

the center of the structure in association with a dense cobble deposit, two dog burials, and a high frequency of pottery and lithic artifacts and faunal remains. The mortar was intentionally placed within this artifact and refuse milieu, perhaps representing a ritual or formalized aspect of abandonment behavior during the Early Developmental period occupation.

The 255 faunal specimens recovered reflect a focus on small mammals, primarily cottontail and jackrabbits (Table 12.6). Turkey is prevalent in the roof fall and floor fill and on the floor. Carnivore gnawing and punctures and the general lack of burning on the turkey suggest that carcasses were brought into the structure after it was abandoned, but before the roof was fully dismantled. The prevalence of turkey, but no evidence for consumption or breeding, suggests that they were trapped and kept for feathers rather than for food. Also of interest are the meadowlark and flicker bones that were recovered. These may be the remains from dogs hunting and consuming local field birds.

After the structure was abandoned and the roof dismantled and collapsed into the structure, there is a sequence of natural filling episodes that resulted in the mix of Early Developmental and Coalition period materials. This mixed temporal assemblage may explain some of the differences in fauna and chipped stone that were observed, as the Early Developmental and Coalition period behaviors and activities were dissimilar. Since the upper fill of Structure 4 was sampled, it is a partial representation of the original assemblages.

The 308 sherds reflect the mixing of two temporal components (Table 12.2). Utility wares were both sand and anthill sand tempered, reflecting Early Developmental and Coalition period temper source distinctions (see Wilson, Chapter 16). Decorated pottery included San Marcial and slipped red over white from the early period and Santa Fe and Galisteo Black-on-whites from the Coalition period. Vessel forms reflect the emphasis on utility wares during the Early Developmental period and a reliance on decorated bowls and

corrugated jars during the Coalition period. Both temporal components emphasize domestic activities, which corresponds to the continued long-term, if discontinuous, occupation of LA 6169 following the abandonment of Structure 4.

Four hundred and thirty-one lithic artifacts were recovered from the upper fill in the Feature 4 pit structure. These artifacts were manufactured from nonvesicular igneous materials (38 percent), chert (38 percent), and chalcedony (15 percent). Low frequencies of Jemez obsidian ( $n = 24$ ), quartzite ( $n = 8$ ), vesicular igneous ( $n = 2$ ), sandstone ( $n = 1$ ), and "other" local materials ( $n = 1$ ) were also represented.

Although there is a general emphasis on later stages of secondary core reduction, the larger material categories like chalcedony, chert, and nonvesicular igneous material exhibit some evidence of primary reduction. Bifacial tool manufacture is indicated by flakes with retouched platforms within the chert ( $n = 6$ ), obsidian ( $n = 5$ ), and chalcedony ( $n = 4$ ) material categories. Three nonvesicular igneous multiplatform cores and two chert single-platform cores, as well as two flakes from hammerstones, were also recovered.

Unutilized flakes (63 percent) and unutilized small angular debris (30 percent) compose the majority of the assemblage. Twelve expedient tools and one formal tool fragment were recovered from the upper fill. Utilized flakes and angular debris were manufactured from chalcedony ( $n = 2$ ), chert ( $n = 4$ ), obsidian ( $n = 2$ ), and nonvesicular igneous materials ( $n = 4$ ). Nine tools exhibit unidirectional wear patterns indicating use as scrapers, while two tools exhibit bidirectional wear indicating use for cutting or sawing. All tools appear to have been used for working bone or wood. Eleven flake tools were complete, indicating that they were used, worn out, and discarded. One flake tool was a medial fragment exhibiting an incomplete functional edge. It is likely the tool was broken during use and discarded. One marginally retouched piece of small angular debris was also found but it lacked evidence of

Table 12.6. Fauna Recovered from LA 6169, Feature 4

	Upper Fill		Feature 66, Vent Shaft		Roof Fall and Floor Fill		Floor		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal/medium-large bird	-	-	-	-	5	2.0%	11	2.7%	16	1.3%
Small mammal	42	10.7%	25	11.5%	8	3.1%	32	7.9%	107	8.4%
Small-medium mammal	47	12.0%	-	-	-	-	3	0.7%	50	3.9%
Medium mammal	2	0.5%	-	-	1	0.4%	-	-	3	0.2%
Medium to large mammal	14	3.6%	4	1.8%	5	2.0%	4	1.0%	27	2.1%
Large mammal	6	1.5%	5	2.3%	2	0.8%	1	0.2%	14	1.1%
Rock squirrel	-	-	1	0.5%	-	-	-	-	1	0.1%
Botta's pocket gopher	-	-	2	0.9%	1	0.4%	5	1.2%	8	0.6%
Yellow-faced pocket gopher	-	-	3	1.4%	1	0.4%	1	0.2%	5	0.4%
Ord's kangaroo rat	1	0.3%	4	1.8%	-	-	-	-	5	0.4%
Banner-tailed kangaroo rat	-	-	6	2.8%	-	-	-	-	6	0.5%
<i>Peromyscus</i> sp.	3	0.8%	-	-	-	-	-	-	3	0.2%
Northern grasshopper mouse	1	0.3%	-	-	-	-	-	-	1	0.1%
Woodrats	-	-	3	1.4%	-	-	-	-	3	0.2%
White-throated woodrat	-	-	1	0.5%	-	-	-	-	1	0.1%
Desert cottontail	152	38.7%	133	61.3%	56	22.0%	92	22.7%	433	34.1%
Black-tailed jackrabbit	44	11.2%	10	4.6%	9	3.5%	13	3.2%	76	6.0%
Large carnivore	-	-	-	-	-	-	1	0.2%	1	0.1%
Dog, coyote, wolf	3	0.8%	-	-	-	-	-	-	3	0.2%
Coyote	2	0.5%	-	-	-	-	-	-	2	0.2%
Dog	15	3.8%	-	-	14	5.5%	37**	9.1%	66	5.2%
Black bear	-	-	-	-	-	-	1	0.2%	1	0.1%
Medium artiodactyl	-	-	3	1.4%	4	1.6%	2	0.5%	9	0.7%
Medium-large artiodactyl	1	0.3%	-	-	-	-	-	-	1	0.1%
Deer or elk	-	-	10	4.6%	-	-	-	-	10	0.8%
Elk	1	0.3%	-	-	-	-	-	-	1	0.1%
Mule deer	2	0.5%	2	0.9%	1	0.4%	3	0.7%	8	0.6%
Pronghorn	1	0.3%	-	-	-	-	1	0.2%	2	0.2%
Domestic sheep or goat	1	0.3%	-	-	-	-	-	-	1	0.1%
Medium bird	-	-	1	0.5%	8	3.1%	2	0.5%	11	0.9%
Large bird	6	1.5%	-	-	10	3.9%	13	3.2%	29	2.3%
Medium-large bird	1	0.3%	-	-	2	0.8%	-	-	3	0.2%
Very large bird	-	-	-	-	41	16.1%	24	5.9%	65	5.1%
Pigeon hawk	-	-	-	-	-	-	1	0.2%	1	0.1%
Scaled quail	-	-	2	0.9%	-	-	-	-	2	0.2%
Turkey	42	10.7%	1	0.5%	79	31.0%	153	37.7%	275	21.7%
Flicker	-	-	-	-	4	1.6%	-	-	4	0.3%
Western meadowlark	-	-	-	-	1	0.4%	-	-	1	0.1%
Passerine	2	0.5%	-	-	-	-	-	-	2	0.2%
True toads	1	0.3%	-	-	-	-	2*	0.5%	3	0.2%
Plains or Woodhouse's toad	-	-	-	-	2	0.8%	1*	0.2%	3	0.2%
Red-spotted or plains toad	-	-	1	0.5%	-	-	-	-	1	0.1%
Woodhouse's toad	-	-	-	-	1*	0.4%	3	0.7%	4	0.3%
Suckers	2	0.5%	-	-	-	-	-	-	2	0.2%
Small mouth buffalofish	1	0.3%	-	-	-	-	-	-	1	0.1%
Group Total	393	100.0%	217	100.0%	255	100.0%	406	100.0%	1271	100.0%
Immature (1/2-2/3 grown)	1	0.3%	2	0.9%	5	2.0%	31	7.6%	39	3.1%
Light/scorch	3	0.8%	8	3.7%	3	1.2%	14	3.4%	28	2.2%
Light to heavy	1	0.3%	1	0.5%	-	-	3	0.7%	5	0.4%
Heavy or black	5	1.3%	-	-	1	0.4%	5	1.2%	11	0.9%
Calcined	-	-	-	-	1	0.4%	1	0.2%	2	0.2%
Complete	63	16.0%	41	18.9%	36	14.1%	93	22.9%	233	18.3%
>75% complete	23	5.9%	22	10.1%	6	2.4%	27	6.7%	78	6.1%
50-75% complete	13	3.3%	11	5.1%	19	7.5%	23	5.7%	66	5.2%
25-50% complete	81	20.6%	46	21.2%	49	19.2%	88	21.7%	264	20.8%
<25% complete	213	54.2%	97	44.7%	145	56.9%	175	43.1%	630	49.6%

\* Each indicates a skeleton counted as one element

utilization. A drill fragment exhibited a sharp tip with polish. It is unclear if the tool was used as a drill or a punch.

A complete two-hand mano manufactured from vesicular rhyolite and a complete expedient handstone made of fine-grained rhyolite were recovered from the upper fill. A metate fragment made of vesicular rhyolite and an indeterminate ground stone fragment of fine-grained sandstone were also recovered.

Structure 4, upper fill, which included the ventilator shaft, yielded 610 bone specimens (Table 12.6). Structure 4 upper fill emphasized cottontail and jackrabbits and more diversity in medium and large mammals, such as mule deer, elk, and pronghorn. There were three fish bones from the upper fill that may reflect historic site use. Turkey was present, as it was in other Early Developmental and Coalition contexts. Again the turkey bones did not exhibit evidence of processing or consumption suggesting that during both periods they were kept for feathers or their bones and not for consumption. The greatest deviation from the general pattern is seen in the ventilator shaft deposit. There, cottontail rabbit soars to 61.3 percent of the assemblage. This increase corresponds with an increase in the variety of small mammals, such as banner-tailed kangaroo rat, Ord's kangaroo rat, and Botta's pocket gopher, for example. This increase in small mammal bone may reflect nesting habits as much as human consumption behavior, following the abandonment of Structure 4. The occurrence of an artiodactyl antler in the lower fill of the ventilator may indicate intentional placement. Closing of the ventilator may have coincided with other abandonment and post-abandonment practices or rituals.

Structure 4 contained abundant floor contact and intramural feature fill debris and artifacts. Dense clusters of cobbles and fire-cracked rock were intermixed with 203 ceramics, chipped ( $n = 65$ ) and ground ( $n = 5$ ) stone artifacts, abundant and relatively diverse faunal remains ( $n = 406$ ), minerals including turquoise and limonite, and adobe clumps. The majority of these artifacts cluster in the south

half of the pit structure and could partly be associated with terminal residential activities. However, sufficient artifacts occur in the north half to suggest that a portion of the assemblage could result from post-abandonment filling.

Pottery recovered from the floor contexts of Structure 4 are shown in Table 12.2. This assemblage is dominated by Middle Rio Grande Plain rim and body sherds. Decorated or non-gray ware pottery included San Marcial Black-on-white and a Tallahogan-like red slip over a white paste. The dominant forms were jars, which account for more than 95 percent of the vessel form distribution. The only other identified form was bowl. Seven sherds exhibit abrasion associated with cooking. The absence of sooting on vessel exteriors and the low frequency of interior abrasion suggests that the majority of the sherds may be from storage vessels. This pattern may partly correspond with the absence of storage pits found within or outside of Structure 4. Storage may have occurred in vessels during this occupation. Low diversity in vessel form and ceramic types is typical of Early Developmental assemblages and reflects a maintainable technological orientation.

Seventy lithic artifacts were recovered from the Structure 4 floor (Table 12.7). The majority were nonvesicular igneous materials (40 percent) and chalcedony (27 percent). Low frequencies of chert ( $n = 10$ ), quartzite ( $n = 8$ ), Jemez obsidian ( $n = 2$ ), sandstone ( $n = 2$ ), and vesicular igneous ( $n = 1$ ) were also recovered.

The assemblage indicates an emphasis on secondary core reduction and formal tool manufacture. Seventy-four percent of whole flakes lack dorsal cortex. Thirteen percent exhibit partial dorsal cortex. There was no evidence of primary core reduction. Five flakes exhibited retouched platforms indicating that bifacial tool manufacture occurred. These flakes were chalcedony ( $n = 3$ ), chert ( $n = 1$ ), and Jemez obsidian ( $n = 1$ ). Bifacial tools manufactured from these materials were not recovered from Feature 4. These tools were apparently manufactured then transported to another location for use. However, a single chalcedony resharpen-

ening flake indicates that at least one tool was resharpened here. A single-platform core, manufactured from nonvesicular igneous materials, and four hammerstones were also recovered.

Unutilized flakes (52 percent) and unutilized small angular debris (14 percent) composed the majority of the assemblage. The tools recovered from the floor were both expedient ( $n = 9$ ) and formal ( $n = 1$ ). Four utilized flake tools were made of nonvesicular igneous materials ( $n = 3$ ) and Jemez obsidian ( $n = 1$ ). All exhibited unidirectional wear patterns typical of scraping on hard media like bone or wood. One of these had two scraping edges and one polished edge. The polished edge may have resulted from scraping on hides. Two nonvesicular igneous flakes were also recovered—one exhibited unidirectional wear, again a wear pattern typical of scraping on hard media. The second tool exhibits unidirectional retouch but lacks evidence of utilization. This tool, however, was a whole flake with a functionally complete retouched edge. Although wear patterns were not observed at 60x, it is likely that the tool was used and discarded. The uniface exhibited a functionally complete edge with bidirectional cutting wear as well as an edge with unidirectional scraping wear. Both show evidence of use on hard media like bone or wood.

Five ground stone artifacts were recovered and they represent at least four grinding implements. A complete expedient handstone was made of quartzite. Two fine-grained sandstone fragments represent an indeterminate mano, a vesicular rhyolite fragment represents an indeterminate metate, and a fine-grained rhyolite fragment is from a shaped slab. No inferences can be made relative to specific processing activities from this limited assemblage.

The faunal assemblage recovered from the floor and intermural features of Structure 4 are shown in Table 12.6. The faunal assemblage had 406 bones and is dominated by turkey and desert cottontail with lesser amounts of black-tailed jackrabbit and artiodactyl. The turkey shows evidence of carnivore gnawing suggest-

ing that it was brought into the structure after abandonment by dogs or coyotes. This is consistent with the roof fall and floor fill assemblage. If the turkey was not a food item consumed by the residents, then it may have been kept as a source of feathers for blankets or clothing. The absence of egg shell in Early Developmental contexts suggests that domestication was unlikely. These birds may have been snared and kept but not bred. High rabbit counts are common for Early Developmental period components. They are indicative of field or near residence hunting. Low artiodactyl counts suggest that large mammals may have been hunted and butchered away from the site with meat and few bones returning with hunters. The dog bones are related to Feature 13 and are not considered a food source. Interestingly, only 3 percent of the bone was burned. Most of the burned bone was rabbit or small mammal suggesting that it was a primary meat source, while turkey and dog were used in other ways.

Two bone artifacts were shaped: scapulae that may have functioned as mat weaving tools. These long, narrow tools may have been used to weave yucca mats (see Chapter 21). Ground stone artifacts are mainly fragmentary and do not appear to be directly linked to household activities or markers of discrete activity space.

The most unusual floor occurrence was the cranial case of a 20- to 40-year-old male (Feature 8). The cranial case was sitting posterior down on the floor with the frontal orbit facing west. Northwest of the cranial case there was a bear jaw, which was probably associated with the interment. Orientation of the cranial case to the west and the association of a bear jaw suggest that it was intentionally placed and left on the structure floor. No other grave goods were observed. The intentional placement of the cranial case on the floor and the placement of infant remains into the structure support the interpretation that Structure 4 was used as a cemetery following abandonment.

*Subsistence Activities.* Evidence for subsistence or daily maintenance and productive

Table 12.7. LA 6169, Structure 4, Floor, Lithic Type by Material Group

	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		Sandstone		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	40.0	2	20.0	1	10.0	-	-	3	30.0	-	-	-	-	10	14.0
Flake	14	37.8	8	21.6	1	2.7	-	-	14	37.8	-	-	-	-	37	52.0
Flake, Sharpening	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	1.0
Tested Rock	-	-	-	-	1	50.0	-	-	1	50.0	-	-	-	-	2	2.0
Core, Single Platform	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Hammerstone	-	-	-	-	3	75.0	-	-	1	25.0	-	-	-	-	4	5.0
Flake, Utilized	-	-	-	-	-	-	1	20.0	4	80.0	-	-	-	-	5	7.0
Flake, Marginal Retouch	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	2	2.0
Uniface	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Mano, Unknown	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Expedient handstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Polishing Stone	-	-	-	-	1	50.0	-	-	1	50.0	-	-	-	-	2	2.0
Shaped Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Total	19	27.1	10	14.3	8	11.4	2	2.9	28	40.0	1	1.4	2	2.9	70	100.0

activities is relatively slim. Direct evidence in the form of ethnobotanical data were inconclusive. Potential economic species identified by the pollen study were *Cheno-am*, *Zea mays*, *Cactaceae*, *Platyopuntia*, and *Cylindropuntia* (see Chapter 24). Without systematic sampling of floor space there is no way to determine if floor areas within the structure were dedicated, at least part-time, to processing of wild plant foods and products. These plants represent a common array in Early Developmental contexts throughout the project.

The analysis of flotation materials was equally inconclusive. *Amaranthus*, *Chenopodium*, and *Zea mays* were identified in Feature 13 associated with the dog burials and initial abandonment (see Chapter 23, McBride and Toll). Other features within Structure 4 failed to yield economic species. No grinding tools or facilities were found on the structure floor, suggesting that plant processing was a minor activity or that it occurred outdoors. Three thermal features, 35, 36, and 42, yielded juniper and four-wing saltbush charcoal, indicating that terraces and their alluvial margins were used for fuel wood gathering.

Faunal remains recovered from within the structure may not necessarily remain from occupants' subsistence activities. In general, the faunal remains display a focus on small and medium mammals that could be obtained locally, such as from fields or in woodland set-

tings. The presence of turkey is interesting because taphonomic evidence suggests that they were not consumed by humans and may have been brought into the pit structure by dogs. Nevertheless, the presence of turkeys suggests that they were kept, but apparently not domesticated, as indicated by the lack of eggshell. Other productive activities indicated by bone artifacts were mat weaving and weaving or leather work. The presence of partial vessels and sherd clusters on the floor may suggest processing areas. These artifacts occurred mainly in the eastern portion of the structure. Typically, the area between the hearth and the ventilator shows the most evidence of domestic activities in Early Developmental pit structures in the Middle Rio Grande (Schmader 1994). This was true for Structure 4.

*Abandonment.* Structure 4 has two different lines of evidence suggesting multiple sequential abandonment processes. Early stage abandonment appears to have been planned and without calamity or ritual burning. There was no wood left from the superstructure and no construction material-impressed adobe survived the 1,200 years of natural deposition following abandonment. The lower floor fill levels contain abundant cobbles, a small amount of adobe, and slightly siltier soil that could have remained from roof construction. However, the bulk of the estimated 20 to 25

tons of roofing soil and vegetal material appear to have been pulled off the roof and did not collapse into the feature. It seems that care was taken to preserve and presumably remove the major superstructural elements with only 3 or 4 metric tons of soil ending up on the floor. Associated with or closely following this purposeful dismantling, two dogs were buried near the middle of the pit structure. These canine skeletons were partly articulated and were placed in the pit structure in fairly good condition.

Reuse of Structure 4 as a burial location was the only additional Early Developmental period activity associated with this area. Feature 1 was a newborn human infant interred in the structure fill. It was located 52 cm below the top of the southwest structure wall. It was interred into sandy loam that had washed and blown into Structure 4 between its abandonment and reuse of the area by Coalition period residents. Structure 4 was not filled with refuse, indicating that much of the Early Developmental activity had shifted away from this portion of the site. The structure's use as a cemetery suggested that the structure depression held symbolic or ritual importance.

Another infant (Burial 13) was recovered from the lower structure fill after it was cross-sectioned with the backhoe. Since only partial remains were found, little can be said about the burial. However, its occurrence in the structure fill reinforces the interpretation that Structure 4 was used as a cemetery following abandonment.

Finally, an interment within the middle elevation of Feature 66, the Structure 4 ventilator shaft, consisted of two children, aged 5 and 7, which further supports use of the Structure 4 area as a cemetery. The two children most probably died concurrently and were placed in an oval-shaped burial pit excavated into the soft fill of the ventilator shaft. No burial goods were associated with this interment. The low frequency of Early Developmental refuse in this area is considered unusual given the fact that Early Developmental use of the general area probably did not cease with the abandon-

ment of Structure 4. Identification of Structure 4 as a cemetery or burial location may have changed the nature of activities and traffic in the area.

Following the initial flurry of dismantling and abandonment, the structure was left open to natural forces. The remaining pit filled in gradually with eolian and colluvial soil mixed with low frequencies of surface artifacts. The pit structure was sufficiently filled so that the later Coalition occupant excavated their pit room into the poorly consolidated soil. This use of the pit fill for the north wall may have required some shoring or stabilization, although rapid excavation failed to recognize changes in soil that would accompany such efforts. The general lack of intentional trash-filling or reuse by Early Developmental period occupants suggests that this portion of the site was abandoned, while other areas or nearby sites were settled.

*Summary.* Structure 4 was a deep, D-shaped pit structure occupied sometime during the late 700s or early 800s. Structure construction was relatively simple four-post roof support system and no evidence of remodeling or shoring of the roof during the occupation. Floor area of 17.5 sq m would have accommodated between three and five individuals comfortably. Floor space was not heavily limited by intramural features and the majority of processing or domestic activities may have occurred in the south half, leaving the north half for sleeping and other activities.

The size, depth and presence of intramural hearths suggests that Structure 4 was occupied during cold weather, if not year round. Deep pit structures have high insulative properties and their internal temperature can be kept at a habitable level with minimal thermal heating (Glennie 1983). Cold weather occupation could include winter, early spring, and late fall. The lack of extramural structures or activity areas indicate that extensive warm weather occupation may have been minimal or also was focused in the pit structure. Just as the pit structure holds thermal heat, it would also insulate from solar heat during the warmest

times of the year. Therefore, pit structure depth cannot only be taken as an indicator of cold weather occupation. Long-term year-round occupation is not suggested by the lack of storage features in the pit structure and in the extramural area. Storage features may have been located outside the project corridor. The abundance of utility jar sherds in the structure that lacked sooting and evidence of cooking may indicate storage. Pot storage would be sufficient for daily use.

The hearth/ash pit/ventilator complex was aligned to the southeast with a possible sipapu located north of the hearth. This arrangement and orientation is typical for Early Developmental Rio Grande pit structures (Lakatos 2003; Schmader 1994). Most evidence indicates that Structure 4 functioned primarily as a residence. Possible ritual activities associated with abandonment and following abandonment include placement of a stag horn in the ventilator tunnel, placement of a human cranium on the floor facing west with an associated bear mandible, and the piling of rock and debris in the middle of the structure at abandonment. The meaning of these ritual offerings or behaviors is not known, especially at the individual structure level. Examination of abandonment behaviors for all Early Developmental structures from this project may produce patterns from which shared ritual and social behaviors may be inferred.

**Structure 47.** Structure 47 was a subrectangular, deep pit structure with 24 intramural features (Figs. 12.21, 12.22). It measured 5.60 m north-south by 6.07 m east-west with a maximum depth of 1.17 m below the prehistoric occupation surface. It was in Study Unit 8 in the west-central portion of Area 2. Structure 76, a Late Developmental period pit structure, was built within Structure 47, incorporating its southwest and west walls. No other structures were found in Area 2. Possible associated extramural features include two large thermal features (Features 88 and 134) based on the occurrence of plain gray pottery.

Excavation revealed limited evidence of

structural remodeling with the distribution of numerous small postholes parallel to the arc of the north wall. Immediately following or soon after abandonment, the superstructure was burned as evidenced by the radiating array of burned cottonwood timbers within the lower 30 cm of structure fill. Burning was followed by natural filling; a partly filled structure was reoccupied during the Late Developmental period 350 years later.

The floor and floor fill ceramic assemblage is dominated by San Marcial Black-on-white and plain gray utility pottery. These are diagnostic of the Early Developmental period. A burial of a 1- to 2-month-old infant was placed along the upper northeast wall to the east of the Feature 121 storage cist.

An archaeomagnetic sample taken from the coping of the central hearth (Feature 160; Sample No. PB 1161) yielded an intercept date of AD 820. A radiocarbon sample (Beta-149025) from the lower fill of Feature 121, a storage pit along the northeast wall, yielded a cal two-sigma date range of AD 660 to 900 ( $1290 \pm 60$  BP) with an intercept date of AD 770. These intercept dates strongly suggest a late eighth or early ninth-century occupation, which fits well with the ceramic assemblage.

*Excavation Strategy.* The structure area that ultimately contained two superimposed pit structures (Structures 47 and 76) was initially recognized as a dark gray cultural deposit exposed at 20 cm below the modern ground surface. This deposit was encountered during early examination of the depth and extent of the Area 2 cultural deposits. Grids 115N/132-134E were excavated within an area of high artifact density. Between 100 and 240 artifacts were recovered from the upper two 10 cm levels. At the bottom of Level 2 in all three grids, a dark charcoal stain soil outline was observed. However, as the intensity of the stain increased with depth the artifact counts decreased, suggesting that the stained soil and artifacts were unrelated.

Excavation was complicated by the construction of the temporally later Structure 76 within Structure 47. Construction of Structure



76, which was completely contained within Structure 47, resulted in the removal or replacement of about two-thirds of the Structure 47 floor area and pit structure fill. Structures 47 and 76 were first evidenced by a deep cultural deposit that indicated the presence of at least one pit structure. Initial cross-sectioning and profiling of the estimated structure area was based on a single structure not on two structures. Therefore, much of the initial systematic excavation provided more information on strata within Structure 76, and less information on Structure 47. The west limit of the remaining intact portion of Structure 47 was identified with the exposure of the adobe remnant of the Structure 76 east wall. This adobe wall faced the less consolidated fill of Structure 47, keeping it from collapsing into Structure 76. East of the Structure 76 wall was the most intact remnant of Structure 47. Unfortunately, the upper 60 to 80 cm of this "intact" stratigraphic remnant was by and large excavated without screening. This resulted in a poor sample of artifacts from the post-abandonment filling of Structure 47.

Grids 120N/135-136E were excavated to within 30 cm of floor, where remnant burned beams were encountered. The excavation along 120N grid line provided an east-west stratigraphic profile of Structures 47 and 76 fill. The north-south profile was excavated along the 133E line. The four quadrants initially were defined along the 119N and 133E grid lines. However, when Structure 76 was found within Structure 47, this quadrant division only applied to Structure 76. A new quadrant division was established for Structure 47 along the 119N and 134E grid lines. Once the 120N and 133E profiles were recorded, the upper fill of the structures was removed with mechanical equipment exposing the approximate outline of Structure 47 and the level at which parts of burned beams were exposed (Figs. 12.23, 12.24).

With the upper pit structure fill removed, the lower 35 to 40 cm of roof fall, burned roof beams, and sandy loam were removed in two levels to within 10 cm of the structure floor.

Charred beams occurred throughout the fill, with each beam fragment defined and mapped before it was removed. A sample of each beam was collected for wood species identification and potential dendrochronological dating. Beams were measured for length and diameter. Once the 30 to 40 cm of fill above the floor was excavated, the lower 10 cm above floor and floor contact fill was removed and screened through 1/8 inch mesh. Floor fill and floor contact artifacts, beams, matting, and cobbles were mapped.

Once the floor was cleared, the subfloor and wall features were excavated according to standard project procedures. Wall clearing exposed two wall storage pits, a wall niche, and the ventilator tunnel opening. The ventilator tunnel was attached to two ventilator shafts suggesting remodeling or redesign of the ventilation system. Removal of the Structure 76 north and east walls exposed the central hearth remnant. Evidence of a four-post roof support system was found along with a number of smaller postholes that may have been from remodeling or reinforcing the superstructure.

Following the excavation of the floor features, the pit structure plan and profiles were mapped. Final structure description and documentation followed standard project procedures. Subfloor testing revealed a dense terrace gravel deposit immediately below the floor negating any potential for subfloor features or earlier, deeper floors.

*Stratigraphy.* Five strata were recognized within Structure 47 (Table 12.8; Figs. 12.25, 12.26). All five strata contain some cultural materials with frequency and range of materials indicating if they are from natural or intentional pit structure filling following abandonment. These multiple cultural strata reflect the complex occupation history of LA 6169. Ceramics from all periods were recovered from the fill of Structure 47. Tables 12.2, 12.8, 12.10, and 12.11 contain artifact distributions for Strata I-III and Strata IV-V.

Strata I through III were minimally sampled by excavation and analysis resulting in low artifact frequencies. However, low fre-

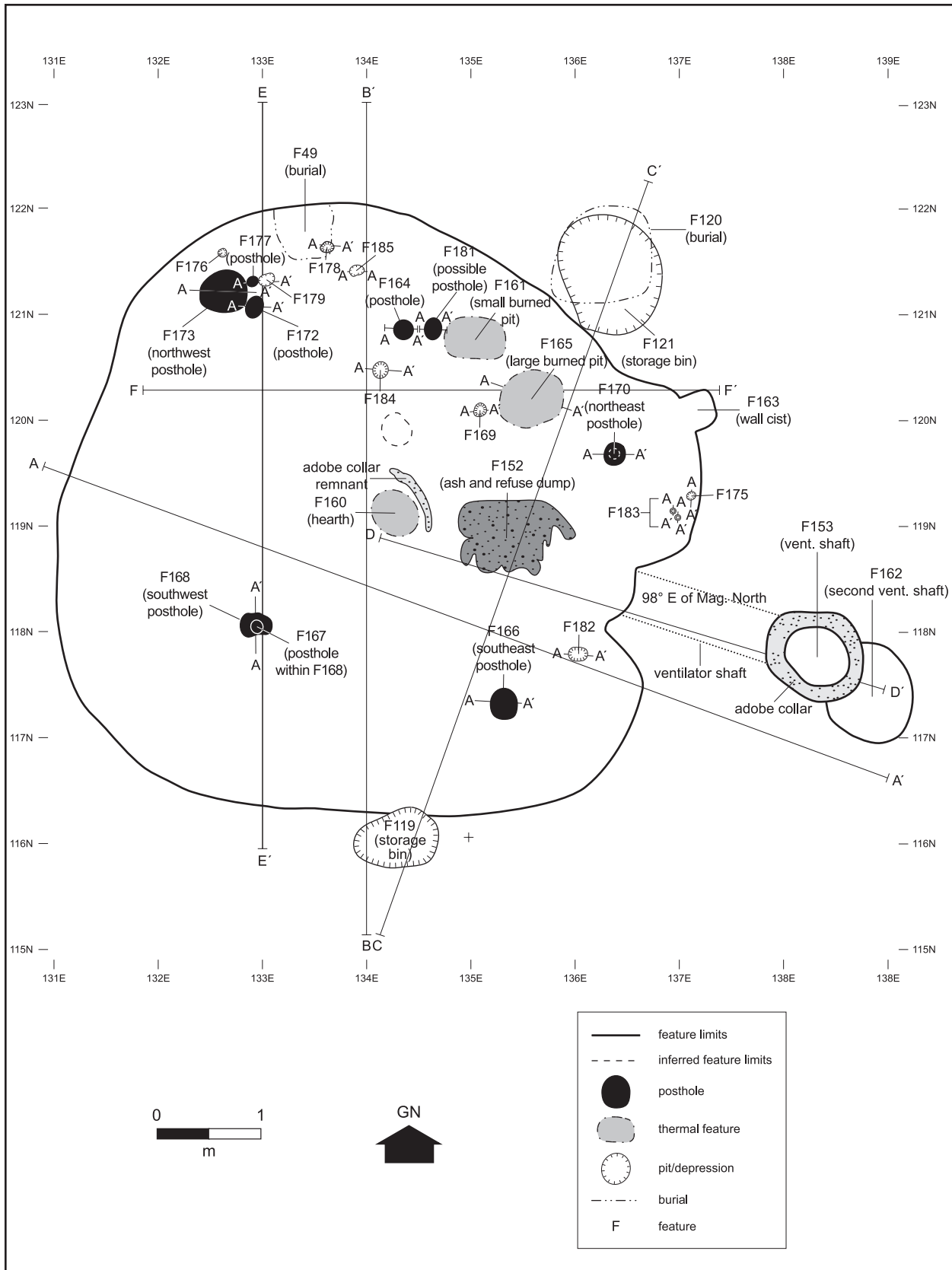


Figure 12.21. LA 6169, Feature 47, plan view.

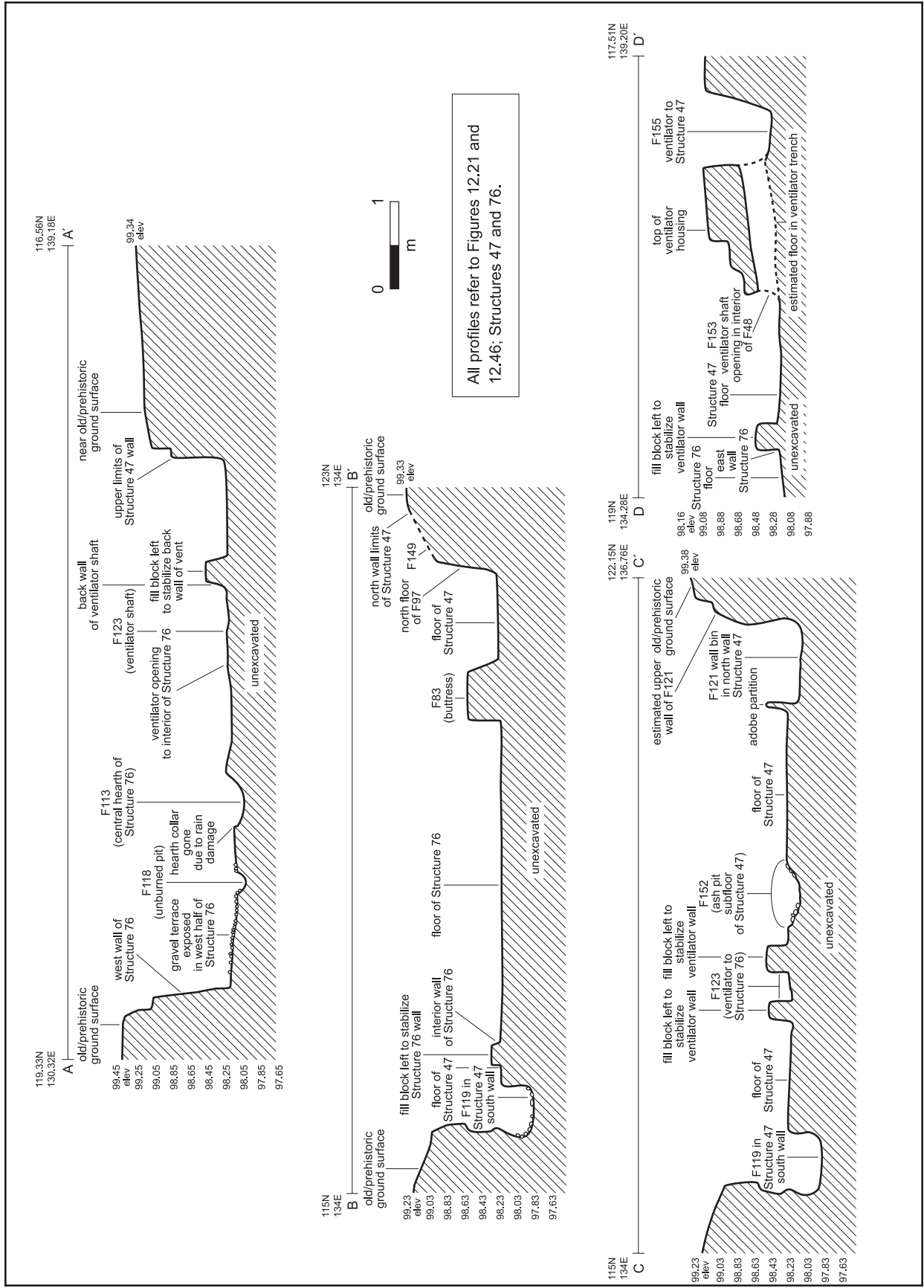


Figure 12.22. LA 6169, Structure 47 and 76 profiles.

quency artifact distribution within the upper levels indicates that terminal filling of Structure 47 was largely due to natural processes. Stratum IV exhibits a much higher artifact count and diversity than upper levels. This suggests that following the initial abandonment, burning, and dismantling of Structure 47, there was low-level use of the depression for trash disposal. Ceramics, lithics, and fauna reflect domestic refuse typical of Early Developmental occupation at all sites within the project area (see Tables 12.2, 12.6, 12.7). Stratum V artifacts are intermixed with the burned roof members, cobbles from roof fall, and roofing soil. This mixture of building material and artifacts indicates that Structure 47 was rapidly filled with a wide range of material soon after abandonment. Trash disposal covers and is intermingled with the burned cross timbers from the roof suggesting that burning was followed by dismantling. The occurrence of artifacts on the structure floor may reflect terminal activities, but they also

reflect almost immediate use of the structure depression as a refuse receptacle.

*Description.* Structure 47 was a deep, straight-walled pit structure remnant excavated into native soil. It had a subrectangular to D-shaped outline that measured 5.06 m north-south and 6.07 m east-west with a 1.0 to 1.20 m maximum depth below the prehistoric occupation surface (top of Stratum 2) and a 1.40 m maximum depth below the modern ground surface. Floor area was 24.3 sq m (Figs. 12.27, 12.28). Stratigraphy indicates that Structure 47 was primarily filled by slow natural process with undisturbed upper fill levels containing artifacts from mixed periods and lower fill levels containing Early Developmental period artifacts. Two-thirds of the pit structure fill was removed by the construction of Structure 76, the Late Developmental pit structure that incorporated the west and south wall of Structure 47. Floor fill and roof fall had burned roof beams and reed matting indicating the structure had burned or that construction



Figure 12.23. LA 6169, Structure 47, excavation in progress.



Figure 12.24. LA 6169, Structure 47, excavation in progress.

material was burned within the structure. Low frequency of floor artifacts suggests that the structure was emptied prior to abandonment and burning. The structure had 24 associated features including four main postholes, five minor postholes, a central hearth and ash area, two other thermal features, five unburned pits, a wall niche, two wall storage pits, and a ventilator shaft and tunnel.

Of additional importance were the skeletal remains recovered from the upper north wall. Feature 120 was a prenatal or infant burial of unknown gender. No burial goods were associated. The interment was in the upper fill of Feature 121, a cylindrical wall storage pit. No other artifacts were associated, although four plain gray sherds were recovered from the fill suggesting that the burial was from the Early Developmental period.

Two chronometric methods yielded dates for Structure 47. An archaeomagnetic sample was taken from the coping of the central hearth (Feature 160; Sample No. PB 1161). The sample provided an intercept date of AD 820 (see

Chapter 15). The signal strength was weak, but the date is acceptable given the associated ceramic assemblage recovered from the floor. A radiocarbon sample of burned saltbush was submitted from the lower fill of Feature 121, a storage pit along the northeast wall of Structure 47. The sample (Beta-149025) yielded a cal two-sigma date range of AD 660 to 900 ( $1290 \pm 60$  BP) with an intercept date of AD 770. The date range is broad, but it does put the wood death date firmly in the Early Developmental period. The relative similar intercept dates for the archaeomagnetic and radiocarbon samples lends credibility to the suggestion that Structure 47 was occupied during the late eighth into the middle of the ninth century AD.

*Construction.* Construction can be inferred from floor features, walls, and burned roof material. Unlike Structure 4, burning preserved what is presumed to be direct evidence of the superstructure.

The pit structure was dug into native soil (Stratum 2, site stratigraphy) to the top of the

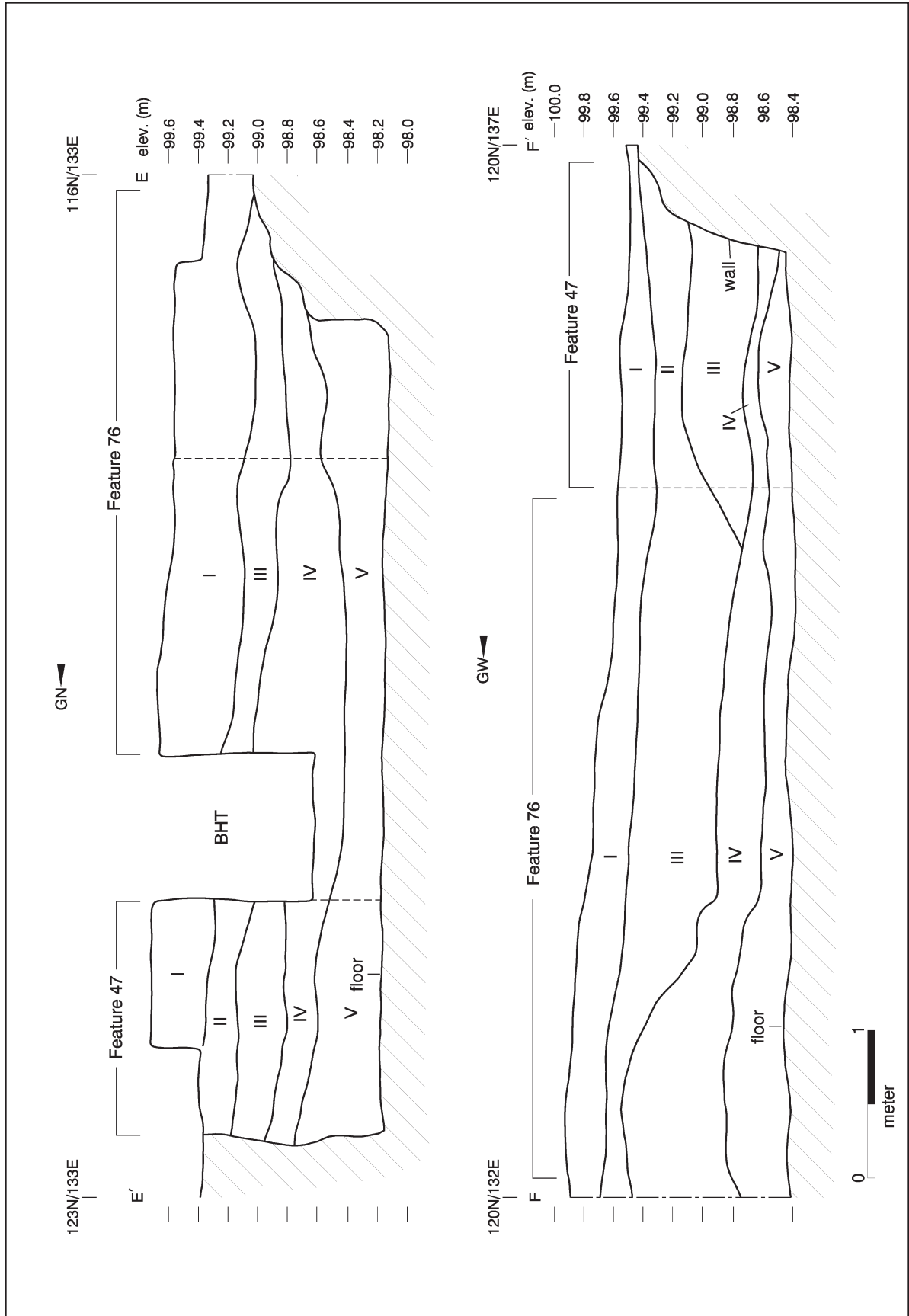


Figure 12.25. LA 6169, Structures 47 and 76, stratigraphic profiles.



Figure 12.26. LA 6169, Trench 120N, Structure 47, profile.

buried gravel terrace deposit (Stratum 4, site stratigraphy), which was exposed where the floor was eroded. No scrape marks or gouges remained on the wall that might indicate the tools that were used. The wall surfaces were smoothed but no evidence of plastering remained, even though the structure burned. The eroded or unprepared walls were vertical and abruptly curve inward to meet the floor. Remaining wall heights range from 0.82 m along the north perimeter to 1.24 m along the south and west perimeter. Walls were in good condition with limited evidence of slumping encountered in Strata III and IV. Upper portions of the walls were difficult to distinguish from fill because of the similar color and texture, though charcoal and occasional artifacts indicated the difference between structure fill and the wall. The lower walls were burned or heavily charcoal stained.

Evidence for roof construction comes from burned beam fragments and reed matting mixed with sandy loam. This layer, Stratum V, was up to 30 cm thick. Beam fragments lying at

an angle often spanned the full breadth of the stratum (Figs. 12.29, 12.30). Beams are relatively evenly distributed around the east one-third of the structure. Obviously, because the western two-thirds of the structure fill was removed by Structure 76 construction, the beam pattern is incomplete.

Based on the pit structure replication model from the Dolores project, the primary structural elements were the four posts and their cross beams (Glennie 1983). Secondary beams would have leaned from the ground surface to the interior cross beam with secondary beams between parallel cross beams. Estimated dimensions for primary and secondary roofing elements can be derived from post-hole diameter, posthole depth combined with estimated posthole height (with an estimated roof height of 1.90 to 2.0 m), and the distance between the wall and the primary cross beams. These dimensions are shown in Table 12.9. Interestingly, the northeast and southeast posts have the shallowest holes and the least diameter. They are also the closest to the walls. The

Table 12.8. Structure 47 Stratigraphic Descriptions (Top to Bottom)

Designation	Description	Munsell Color Range	Comments
I	Eolian sandy loam, 20-30 cm thick	Dark brown; 10YR 4/3, dry	Sandy loam with fine-grained silt; well consolidated with small sparse roots, occasional cobbles and charcoal; high artifact frequency with Late Developmental and Coalition period pottery types
II	Eolian sandy loam, 20-40 cm thick	Dark brown; 10YR 4/3, dry	Sandy loam with fine-grained silt; well consolidated with small sparse roots, 10 percent gravel and cobbles and increase in charcoal content from Stratum I; artifact frequency diminished with fewer Coalition period and a higher proportion of Early Developmental period ceramics; this deposit remains from natural, slow filling process
III	Fine sandy loam, consolidated blocky structure, wavy boundary, nonplastic when wet, 40 cm thick	Pale brown; 10YR 6/3, dry	Natural filling episode with low frequency of Early Developmental pottery; no post-abandonment intrusions
IV	Fine sandy loam, consolidated blocky structure, wavy boundary, nonplastic when wet, 20 cm thick	Brown; 10YR 5/3, dry	Natural deposit capping roof fall, low frequency of Early Developmental period ceramics
V	Sandy loam, moderately consolidated, blocky structure, distinct boundary; abundant charcoal, oxidized adobe, charred beam fragments, roof matting, abundant cobbles, 10 to 20 cm thick	Yellowish brown, 10YR 5/4 dry	Roof fall, wall melt, and natural fill; roof materials are burned as is some of the fill; strong evidence suggesting that Feature 47 burned; ceramics are predominantly Early Development period

burned secondary beam elements range in length from 0.75 to 1.30-m long and 5 to 17 cm in diameter. These would have easily spanned the distance from the primary cross beam to the top of the exterior wall with 10 to 20 cm of length remaining to be buried in the ground surface at the top of the wall. At a 60 degree angle, they would provide 1.9 to 2.0 m of head space with a 0.25-m-wide perimeter that would have been between 1.40 and 1.50 m in height. In other words, the burned beams on and above the pit structure floor easily could have been secondary beams.

The southwest and northwest postholes are more substantial than their counterparts along the east wall. They have a greater diam-

eter and were buried more deeply beneath the pit structure floor. Their larger size corresponds with their greater distance from the pit structure wall. Because the burned elements from the west portion of the pit structure were removed by Structure 76 construction, the secondary element lengths are unknown. If we take the distance from the southwest and northwest postholes to the wall as a proxy measurement, then they would have been between 1 and 2 m long. The greater distance spanned by these elements would have increased their roofing material load and weight, so that larger posts would have provided extra support.

A smaller posthole (Feature 172) was locat-





Figure 12.27. LA 6169, Structure 47 after excavation.



Figure 12.28. LA 6169, Structure 47 and 76 after excavation.

ed immediately southeast of the northwest posthole (Feature 173) and two small postholes were located in the middle between the northwest and northeast postholes. These three extra, smaller postholes may have added support to the roof spanning the north half of the structure, which had a 4.20 m distance between posts.

Roof construction incorporated cottonwood limbs, reed matting, and a soil and rock cover. Evidence of all three was observed in the lower 30 cm of pit structure fill. The stratigraphic profile along the east wall showed reed matting on top of the secondary beam layer suggesting that the beams were laid on the cross beams covered with a mat and then covered with dirt and rocks. Abundant small cobbles were encountered on the structure floor indicating they are integral to the organic roofing material.

The floor was primarily unprepared. The compact floor consists of the same native soil into which the structure was excavated. Extent of preparation may have been to moisten, smooth, and float the fine particles. The floor is formed directly on top of a gravel layer that may be an ancient terrace deposit. Condition of the floor was patchy and undulating rather than flat and level. The floor around the junction with the wall slopes up rapidly. The floor is slightly basin-shaped with the lowest elevation at the central hearth.

The other evidence of superstructure is the four postholes (Features 173 [northwest], 170 [northeast], 168 [southwest], and 166 [southeast]). Feature 173 was 58 cm deep, Feature 170 was 58 cm deep, Feature 168 was 32 cm deep, and Feature 166 was 46 cm deep. Only Feature 170 was a bi-level posthole with a wide opening and deep, inward tapering interior pit. No wood was recovered from these features and their function is inferred from their shape and placement within the pit structure. Postholes are spaced 2.4 to 4.0 m apart. Their uneven spanning distance and distance from nearest walls indicate that posts in the east half would have supported less weight than the west half supports. Unlike Structure 4, the posthole pattern is not equidistant or symmetrical. Reasons for this difference are not clear, though it may

relate to division of work and sleeping space. The majority of the features were in the east half, which has a narrower post spacing. The west-half posts are more widely spaced, perhaps allowing for more people to sleep comfortably.

*Floor and Wall Features.* The structure had 24 associated features including four main postholes, five minor postholes, a central hearth and ash area, two other thermal features, five unburned pits, a wall niche, two wall storage pits, and a ventilator shaft and tunnel (Table 12.9).

Floor features are arranged dividing the pit structure floor into open space and "work or activity" space. Figure 12.21 shows the plan view of the pit structure floor with all of the larger, non-posthole features in the north half and only one shallow feature in the north half, as defined by the east-west axis through the central hearth. In the north half there are two cobble-filled thermal pits (Features 161 [Figs. 12.31, 12.32] and 165 [Figs. 12.33, 12.34]) and nine unburned, small, sand-filled pits or divots (Features 169, 175, 176, 178, 179, 182, 183, 184, and 185 [Figs. 12.35, 12.36]). These small floor pits may have been pot rests or temporary processing or storage pits. The low frequency and diversity of intramural pits suggests fairly limited domestic activities within the pit structure.

The central hearth (Feature 160) was on an axis with a shallow ash and trash-filled pit (Feature 152) 25 cm to the east of the central hearth, and the ventilator tunnel (Feature 153) (Fig. 12.37). These three features are at a 90 degree angle to the four posthole axes and aligned at 98 degrees east of magnetic north. East and southeast structure/feature orientations are the common floor plan in the Middle Rio Grande Valley (Frisbie 1967; Schmader 1994).

Feature 160 was truncated by the construction of the east wall of Structure 76. Wall construction removed all but the east edge of the adobe hearth collar. This collar remnant was incorporated into the lower wall. The remaining hearth was a circular, shallow, basin-shaped pit that was filled with grayish white (10YR 5/1, moist) compacted ash mixed with

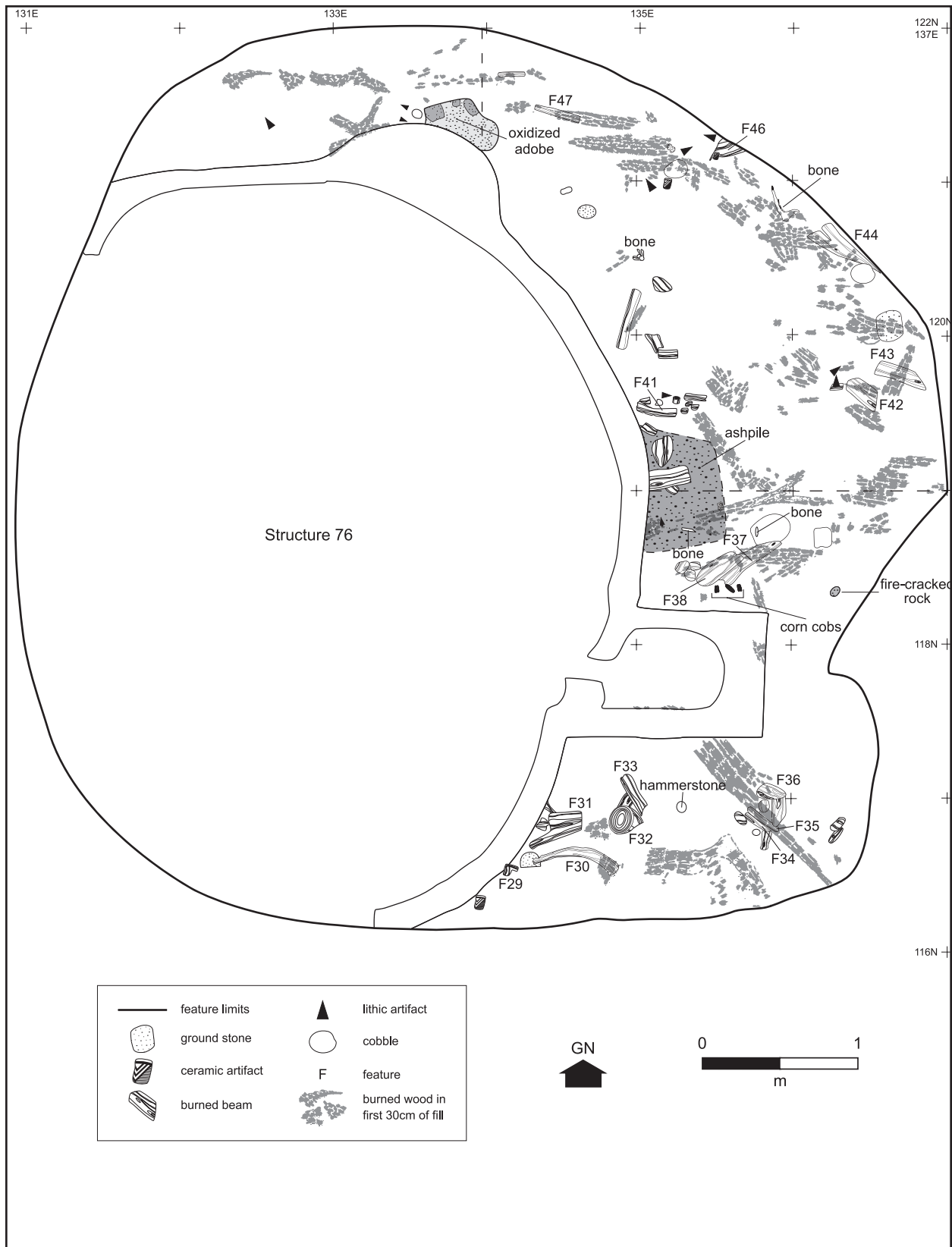


Figure 12.29. LA 6169, Structure 47 showing burned beam locations.



Figure 12.30. Structure 47, showing exposed burned beams in floor and roof fall.

charcoal flecks (Figs. 12.38, 12.39). This layer was only 5 to 8 cm thick. It was capped by a compacted sand that may have been a floor patch meant to cover the hearth, within Structure 76. No artifacts were recovered from within the hearth.

Feature 152 is an informal, irregularly shaped ash and refuse area between the central hearth and the ventilator opening (Fig. 12.31). This ash and artifact concentration covers a large area and may in part be the dismantled remains of a hearth that was moved and rebuilt as Feature 160. Of the 309 animal bones recovered from Feature 152, 37 percent were from small mammals including desert cottontail rabbit, black-tailed jackrabbit, and woodrat (see Table 12.10). Seven bones from a horned lark were also recovered. The animal bone was 95 percent unburned indicating it was deposited as trash and mixed with ash rather than discarded into an active fire and discarded with the hearth spoil. None of the bone showed animal alteration, indicating it was discarded after human consumption. Only 12 sherds were

recovered, of which two were San Marcial Black-on-white and two were of the few Jornada or Mogollon brown wares recovered from floor or floor feature contexts within Structure 47.

A high frequency of artifacts recovered from ash pits or concentrations is a recurrent pattern in Peña Blanca Early Developmental period pit structures. Materials from project ash pit contexts include tool manufacturing microflakes, splintered animal bone, and turquoise and shell fragments. Sherds are rarer than other common material classes.

Wall features included a wall niche (Feature 163), two storage pits (Feature 119 and 121), and the ventilator opening and tunnel. The wall niche (Feature 163) was in the northeast wall (Figs. 12.40 and 12.41). Wall niches are common in pit structures, but were relatively rare for the Peña Blanca sites. No material remains were recovered that would add to an interpretation of the feature function. It was the only small "storage" feature found in Structure 47. Its use could have been special-

ized, since it did not have a large storage capacity. Unlike the wall niche (Feature 41) in Feature 4, this feature only vaulted 20 cm above the floor and was 40 cm below the floor. It could have been used to storage bulk items with the vaulted ceiling allowing access. Also, it is different from Feature 41 in its contents. Feature 163 contained 55 pieces of chipped stone debris that may remain from a single reduction episode, 53 small mammal bones, 2 pieces of ground stone, and 9 Middle Rio Grande Gray ware sherds. The animal bone was primarily from small mammals including desert cottontail and black-tailed jackrabbits. One artiodactyl bone was recovered. The volume of artifacts recovered from Feature 163 is greater than was recovered from lower pit structure fill suggesting that these items were stored or placed within the feature near or at the time of abandonment.

The two storage pits (Feature 119 and 121) were unique for LA 6169 (Figs. 12.39-12.42). They were located at opposite sides of the structure in the north and south walls. The deep cylinders were excavated into the structure wall and separated from the structure interior by a thin native soil wall. Access to stored goods would have been from the top, which would have made cleaning out the pit difficult given their 101 and 115 cm depths. No remains were recovered that would suggest the function of these pits. Both pits exhibited stratigraphy indicative of natural, rather than, intentional filling. Burned twigs and reed matting recovered from Feature 119 may be remains of a cover, but also may be part of the burned pit structure roof fall. The size and shape of these features is similar to floor storage pits in Structure 50, Floor 2, LA 6170.

The ventilator tunnel and shafts (Features 153 and 162) were built into the east wall (Figs. 12.43, 12.44). The ventilator opening was at floor level and with each side of the opening protruding as short, rounded lobes. The opening was 50 cm wide by 34 cm high. The opening showed no evidence of formal preparation. The tunnel, as best as it could be defined, was D-shaped, measuring 1.52 m long, with a gen-

tle uphill slope from the opening to the shaft. Two strata were observed at the ventilator opening. Stratum 1 is a brown (7.5YR 4/4), dense clay loam mixed with charcoal that was 20 cm thick. Stratum 2 is a brown (7.5YR 4/4) layer of sandy clay silt mixed with charcoal and large pieces of burned wood. It is 15 cm thick. This layer formed soon after the roof elements were burned as indicated by the large wood pieces. An antler fragment was recovered from the tunnel within 5 cm of its junction with the shaft. Other artifacts recovered from the tunnel included 12 sherds, chipped stone, a bone ornament, 163 animal bone fragments, and a pigment-covered mano. Some of these artifacts may have been intentionally placed in the ventilator during abandonment.

The ventilator shaft was actually two shafts. It appears that the first shaft was judged too far away or of insufficient volume to supply adequate circulation into the pit structure. A second shaft was excavated through the west wall of the first shaft and closer to the structure. The second shaft was slightly larger than the first (Feature 162). The ventilator shafts filled naturally as indicated by the moderate frequencies of refuse that were recovered.

Nine postholes were identified within the probable limits of Structure 47. The arrangement of the major postholes and evidence for remodeling was discussed as part of pit structure construction. Posthole data are included in Table 12.9. Posthole cross sections are provided in Figures 12.33 and 12.35.

An infant burial, Feature 120, was placed along the upper northeast wall. This interment was made after the structure was abandoned, but before Structure 76 was built. The burial pit was excavated into the upper fill of Feature 121, a wall storage pit, and 40 cm below the top of the Structure 47 wall. The burial pit was 60 cm in diameter and may have been capped with a layer of adobe that had collapsed on top of the skeleton. The burial is of an infant less than two years old. Burial orientation was to the south and it may have been flexed. There were no grave goods associated with the child. More detail on this burial is provided in the

Table 12.9. LA 6169, Structure 47, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
49	Child burial with funerary objects	Into the northwest wall, 121N/133E	N/A		Interred in upper portion of the north wall; Late Developmental period, postdates Structures 47 and 76
119	Storage bin	SE Quad	85 x 71 x 115	Deepest fill (20-30 cm above the pit floor) is a combination of water deposited silt and clay. Reeds near the bottom indicate it was open when the structure roof was burned; the middle 30-40 cm is Stratum V mixed with eolian sand; upper 20 to 25 cm is a combination of Stratum III and IV reflecting the natural filling of the upper portion of the pit structure.	Built into the south wall; oxidized interior
120	Child burial	Interred into the northeast wall in 121N/136E	N/A		Interred into the upper portion of the northeast wall; postdates Structure 47, but probably is Early Developmental period
121	Storage bin	NE Quad	113 x 92 x 101	Upper 19 cm similar to Stratum III; next 26 cm water-deposited silts that formed in puddles when the pit interior was a depression with the structure depression; lowest 50 cm is a combination of Stratum IV and V reflecting post-abandonment roof burning; low artifact frequency reflects natural filling, as was evident in the pit structure	Built into the north wall; partitioned from structure interior by adobe wall
148	Posthole		11 x 10 x 7	Stratum V	
152	Ash and refuse dump	NE Quad, east of Feature 160 central hearth	96 x 90 x 20	Grayish-brown (10YR 5/2) fine sandy loam mixed with charcoal and ash. Abundant animal bone and chipped stone	Irregularly shaped concentration of ash and charcoal infused Stratum V. Artifacts included 12 sherds, 309 animal bones, ground stone and chipped stone
153	Ventilator tunnel and shaft	SE Quad	(T) 50 w x 38 h x 152 L; (V) 90 x 70 x 80	See text	Vent housing protrudes from southeast wall; antler fragment deposited in tunnel
160	Central hearth with adobe collar remnant	Center of pit structure	40 x 40 x 8	Hearth fill was a grayish white (10YR 5/1) ash	Hearth was partly destroyed by Feature 76 construction; collar remnant was incorporated into east wall of Feature 76
161	Small burned pit	NE Quad	50 x 38 x 18	Upper 14 cm were a pale brown (10YR 6/3) fine grain sandy loam with diffuse charcoal flecks; lower 5 cm very pale brown (10YR 7/3), clean sand	Steep walled, basin-shaped pit with burned cobbles on the hearth floor; fill was not heavily charcoal-stained; pit walls and rim were lightly oxidized
162	Second ventilator shaft	Outside of SE wall in 117N/138E	84 x 70 x 66'	See text	Exposed in the southeast wall of Feature 153; sloped, unfinished floor; rough walls; built far from pithouse wall and abandoned
163	Wall niche	NE Quad	42 x 32 x 24 (h) x 40 (d)	Clean, dark yellowish brown (10YR 4/4) sand; possible evidence of intentional filling; abundant animal bone and lithic artifacts	Built into the east wall; filled with refuse; excavated into underlying gravel terrace

Table 12.9. Continued.

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
164	Posthole	NE Quad	18 x 18 x 33	Fill was dark grayish brown (10YR 4/2) sandy loam; interior was lined with a fine, dark yellowish brown (10YR 4/4) clay loam	Steep-walled and deep. Excavated into Stratum III underlying gravel terrace deposit
165	Large burned pit	NE Quad	56 x 52 x 20	Grayish brown (10YR 5/2) clay loam with diffuse charcoal and burned cobbles and ground stone	Basin-shaped and steep sided with burned cobbles and ground stone in the dark charcoal stained fill; interior walls were slightly oxidized
166	Southeast posthole	SE Quad	27 x 27 x 46	Brown (10YR 5/3) sandy loam mixed with abundant charcoal suggesting that the posthole was open when the roofing members were burned	Excavated into the underlying gravel terrace; posthole wall stabilized with clay
167	Posthole within Feature 168	SW Quad	13 x 11 x 26	Brown (10YR 4/3) sandy loam with sparse, diffuse charcoal	Narrow diameter posthole, part of remodeling of Feature 168, the southwest posthole
168	Southwest posthole	SW Quad	39 x 35 x 32	Yellowish brown (10YR 5/6) loamy clay with large chunks of charcoal suggesting tht Stratum V	Large, steep-sided posthole; no wood remained
169	Divot	NE Quad	11 x 10 x 6		
170	Northeast posthole	NE Quad	35 x 25 x 28 (U); 13 x 13 x 30 (L)	Dark yellowish brown (10YR 3/4) sandy clay with dispersed charcoal flecks	Bi-level posthole; upper level over-excavated into sandy clay; lower level narrow diameter hole excavated into gravel terrace; clay loam was packed against post to stabilize it and the posthole wall
171	Small pot rest	SE Quad	10 x 8 x 2	Stratum V	Shallow, basin-shaped pit; filled with clean Stratum V
172	Secondary posthole	NW Quad	16 x 15 x 24	Yellowish brown (10YR 4/4) coarse-grained sand mixed with charcoal chunks and flecks suggesting the posthole was open when the roofing members were burned	Narrow diameter, steep-sided pit that may have reinforced Feature 173
173	Northwest posthole	NW Quad	38 x 36 x 58	Brown (10YR 4/3) sandy loam with sparse, diffuse charcoal	Deeply excavated into underlying terrace gravel
175	Small pit	NE Quad	13 x 13 x 7	Yellowish brown (10YR 5/4) silty loam mixed with small charcoal flecks and burned twigs	Irregular outline and basin shaped
176	Possible pot rest	NW Quad	16 x 13 x 6	Yellowish brown (10YR 5/4) silty loam	
177	Secondary posthole	NW Quad	14 x 14 x 17	Yellowish brown (10YR 4/4) sandy loam with dispersed charcoal	May have reinforced the northwest superstructure
178	Possible pot rest	NW Quad	14 x 14 x 4	Stratum V	Shallow basin-shaped pit
179	Possible pot rest	NW Quad	18 x 14 x 4	Stratum V	Shallow basin-shaped pit
182	Pot rest (?)	SE Quad	24 x 20 x 10	Stratum V	Feature was plugged with clay
183	Two divots	SE Quad	9 x 9 x 6; 7 x 7 x 3	Stratum V	Two basin shaped divots along the east wall
184	Secondary posthole	NE Quad	15 x 13 x 12	Yellowish brown (10YR 4/4) sandy loam with dispersed charcoal	Possible reinforcing posthole
185	Divot	NW Quad	12 x 20 x 6	Stratum V	
186	Small pit	NW Quad	13 x 11 x 6	Stratum V	Shallow, basin-shaped pit with clean fill; possibly a pot rest

Table 12.10. Summary of Fauna from LA 6169, Structure 47

	Upper Fill		Vent Shaft, F. 152		Roof Fall and Floor Fill		Floor and Features		Ash Dump, F. 153		Group Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Small mammal/med-lrg bird	-	-	1	0.4%	-	-	2	0.7%	2	1.3%	5	0.7%
Small mammal	4	21.1%	82	35.5%	7	10.9%	47	17.6%	11	7.0%	151	20.4%
Small-medium mammal	-	-	23	10.0%	-	-	13	4.9%	3	1.9%	39	5.3%
Medium mammal	-	-	-	-	-	-	1	0.4%	-	-	1	0.1%
Medium to large mammal	2	10.5%	-	-	7	10.9%	8	3.0%	5	3.2%	22	3.0%
Large mammal	-	-	-	-	7	10.9%	7	2.6%	2	1.3%	16	2.2%
Black-tailed prairie dog	-	-	-	-	-	-	1	0.4%	1	0.6%	2	0.3%
Botta's pocket gopher	-	-	3	1.3%	-	-	1	0.4%	1	0.6%	5	0.7%
Yellow-faced pocket gopher	-	-	3	1.3%	3	4.7%	4	1.5%	-	-	10	1.4%
Banner-tailed kangaroo rat	-	-	-	-	-	-	3	1.1%	-	-	3	0.4%
Woodrats	-	-	9	3.9%	-	-	6	2.2%	-	-	15	2.0%
White-throated woodrat	-	-	2	0.9%	-	-	-	-	-	-	2	0.3%
Medium to large rodent	-	-	2	0.9%	-	-	1	0.4%	-	-	3	0.4%
Desert cottontail	6	31.6%	61	26.4%	17	26.6%	98	36.7%	72	45.6%	254	34.4%
Black-tailed jack rabbit	4	21.1%	19	8.2%	3	4.7%	42	15.7%	37	23.4%	105	14.2%
Large carnivore	-	-	1	0.4%	-	-	-	-	-	-	1	0.1%
Badger	-	-	-	-	1	1.6%	-	-	-	-	1	0.1%
Medium artiodactyl	-	-	15	6.5%	13	20.3%	23	8.6%	14	8.9%	65	8.8%
Medium to large artiodactyl	1	5.3%	-	-	1	1.6%	-	-	1	0.6%	3	0.4%
Deer or elk	-	-	-	-	-	-	-	-	1	0.6%	1	0.1%
Elk	-	-	-	-	-	-	-	-	1	0.6%	1	0.1%
Mule deer	1	5.3%	-	-	1	1.6%	3	1.1%	-	-	5	0.7%
Pronghorn	-	-	1	0.4%	1	1.6%	2	0.7%	-	-	4	0.5%
Medium bird	-	-	1	0.4%	-	-	-	-	-	-	1	0.1%
Medium-large bird	-	-	-	-	-	-	-	-	1	0.6%	1	0.1%
Duck	-	-	-	-	1	1.6%	-	-	-	-	1	0.1%
Scaled quail	-	-	-	-	1	1.6%	-	-	1	0.6%	2	0.3%
Turkey	-	-	-	-	1	1.6%	-	-	-	-	1	0.1%
Sandhill crane	-	-	-	-	-	-	1	0.4%	-	-	1	0.1%
Horned lark	-	-	7	3.0%	-	-	-	-	-	-	7	0.9%
Western meadowlark	-	-	-	-	-	-	-	-	1	0.6%	1	0.1%
Paserines	-	-	1	0.4%	-	-	-	-	-	-	1	0.1%
Ornate box turtle	-	-	-	-	-	-	1	0.4%	-	-	1	0.1%
Great plains toad	-	-	-	-	-	-	-	-	1*	0.6%	1	0.1%
Plains or Woodhouse's toad	-	-	-	-	-	-	-	-	1	0.6%	1	0.1%
Woodhouse's toad	1	5.3%	-	-	-	-	1	0.4%	2	1.3%	4	0.5%
Northern leopard frog	-	-	-	-	-	-	2	0.7%	-	-	2	0.3%
Group Total	19	100.0%	231	100.0%	64	100.0%	267	100.0%	158	100.0%	739	100.0%
Fetal, neonate	-	-	6	2.6%	1	1.6%	3	1.1%	-	-	10	1.4%
Immature (1/2-2/3 grown)	-	-	2	0.9%	3	4.7%	1	0.4%	2	1.3%	8	1.1%
Light/scorch	-	-	13	5.6%	4	6.3%	24	9.0%	4	2.5%	45	6.1%
Light to heavy	-	-	4	1.7%	5	7.8%	9	3.4%	2	1.3%	20	2.7%
Heavy or black	-	-	3	1.3%	2	3.1%	21	7.9%	-	-	26	3.5%
Heavy to calcined	-	-	1	0.4%	-	-	3	1.1%	-	-	4	0.5%
Calcined	-	-	5	2.2%	2	3.1%	3	1.1%	2	1.3%	12	1.6%
Complete	1	5.3%	16	6.9%	3	4.7%	35	13.1%	26	16.5%	81	11.0%
>75% complete	-	-	3	1.3%	1	1.6%	10	3.7%	10	6.3%	24	3.2%
50-75% complete	3	15.8%	11	4.8%	3	4.7%	6	2.2%	20	12.7%	43	5.8%
25-50% complete	4	21.1%	31	13.4%	12	18.8%	44	16.5%	36	22.8%	127	17.2%
<25% complete	11	57.9%	170	73.6%	45	70.3%	172	64.4%	66	41.8%	464	62.8%

\* each represents a skeleton counted as one specimen



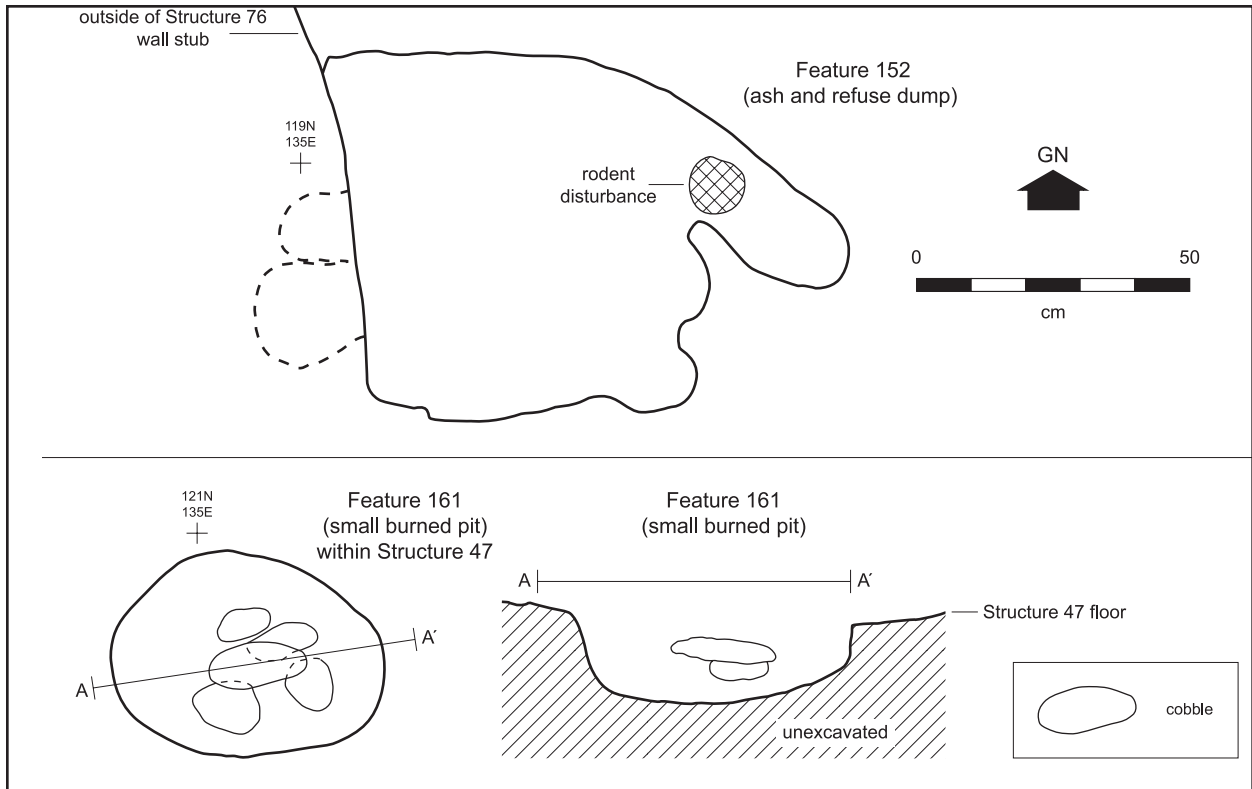


Figure 12.31. LA 6169, Structure 47: (a) Feature 161, (b) Feature 152.



Figure 12.32. LA 6169, Feature 161.

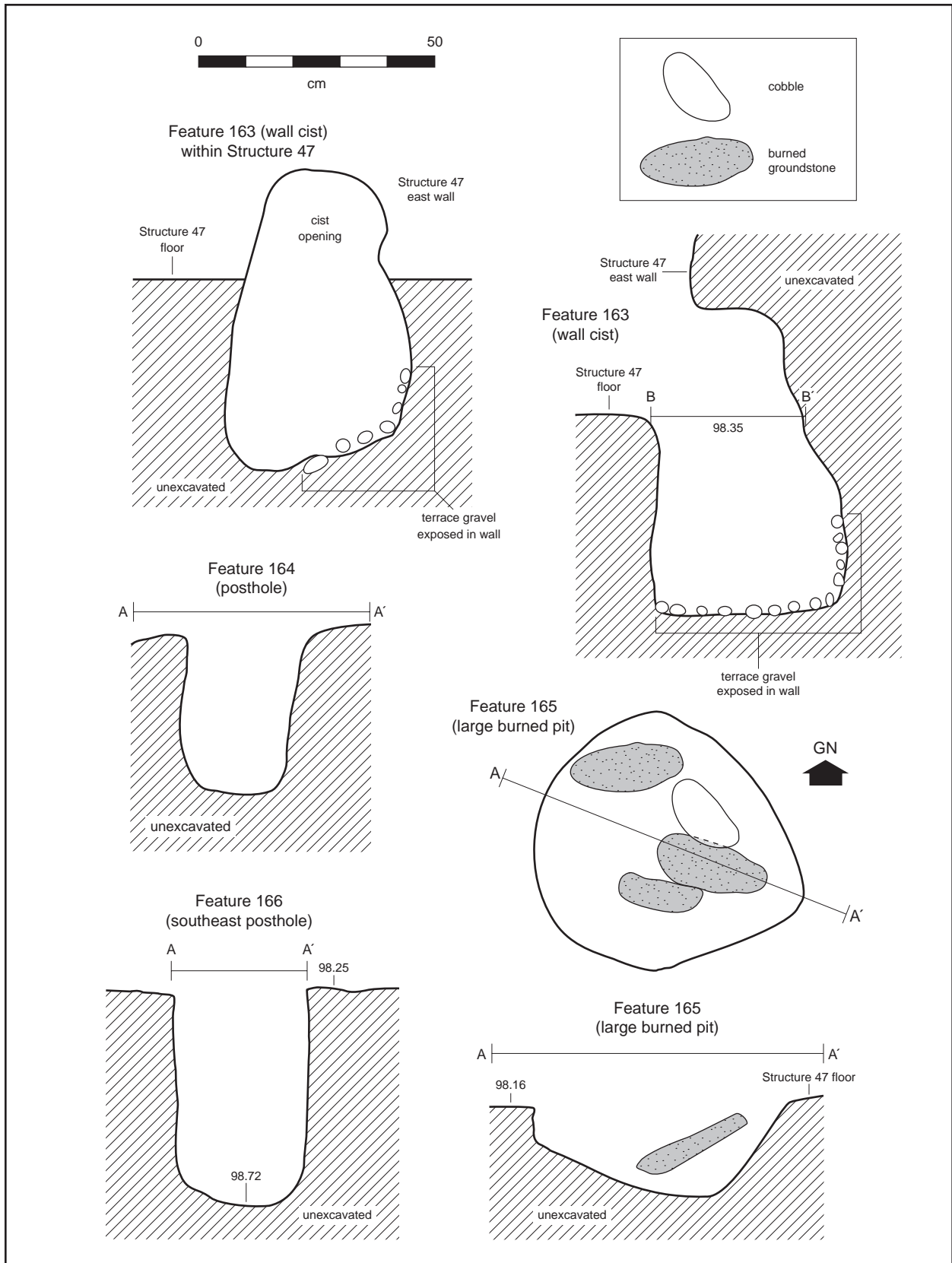


Figure 12.33. LA 6169, Structure 47: (a) Feature 163; (b) Feature 164; (c) Feature 166; (d) Feature 165.

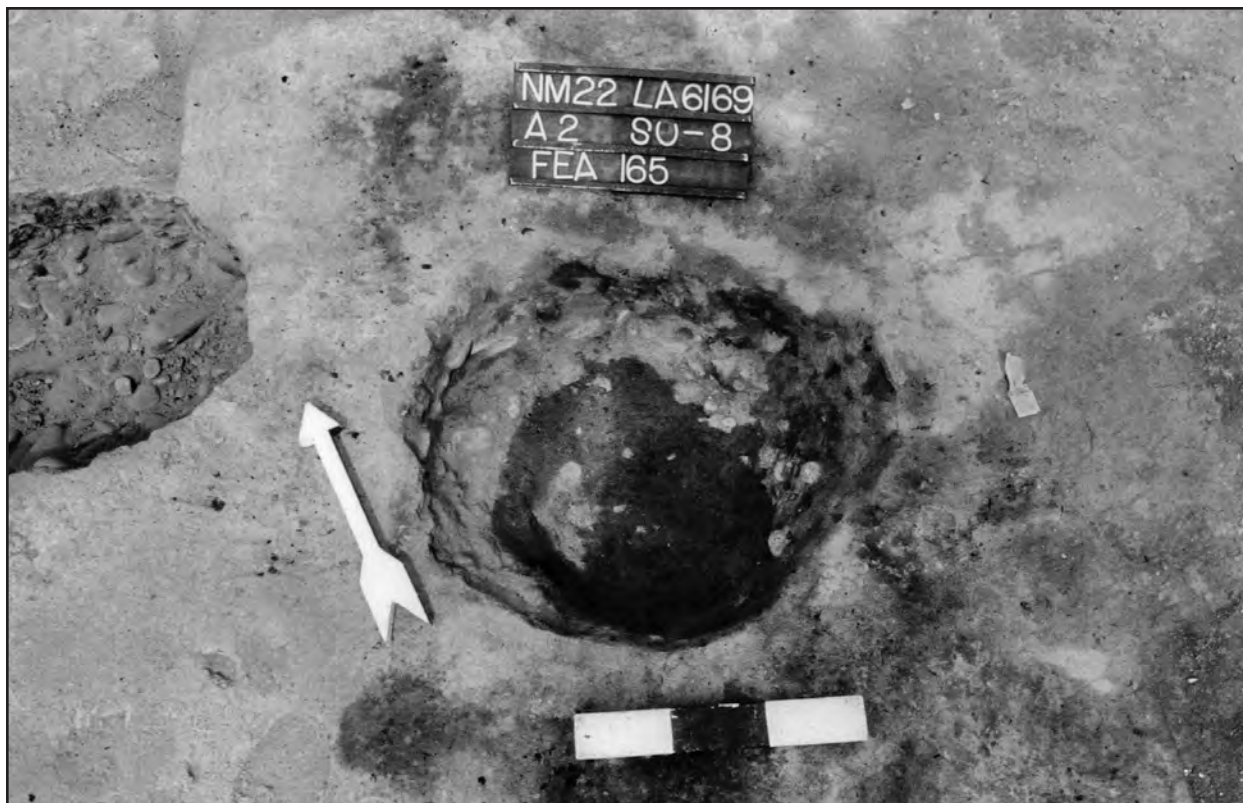


Figure 12.34. LA 6169, Structure 47, Feature 165.

Human Remains chapter of this report.

**The Artifact Assemblage.** Primarily lithic artifacts, pottery, and faunal remains were recovered from Structure 47. These different artifact classes occurred in variable frequencies from the upper structure fill (Strata 1-3), roof fall and floor fill, and floor and intramural feature contexts. Different artifact classes are summarized individually by context. Strata 1-3, upper fill artifacts, are not summarized here because they occur in low frequencies that reflect natural filling of the structure following abandonment and burning.

Roof fall and floor fill artifacts remain from activities that occurred immediately following abandonment and burning. Similar to Structure 4, Structure 47 does not exhibit evidence of prolonged or intense trash-filling episodes. Artifacts appear to have entered the structure as part of the alluvial deposit that covers and intermingles with the roof fall.

Sherds from roof fall and floor fill number 155 and are predominantly Middle Rio Grande

Plain body and rim sherds. These sherds were primarily from jars, and with only one sherd of San Marcial Black-on-white, emphasizing cooking and storage. As is generally expected for Early Developmental components, the ceramics are primarily of local manufacture. Eight sherds from the Late Developmental period represent limited mixing as a result of the construction of Structure 76 within Structure 47.

One hundred and ninety-nine lithic artifacts were recovered from the fill (Table 12.11). The majority of these artifacts were chalcedony (47 percent) and nonvesicular igneous materials (42 percent). Low frequencies of Jemez obsidian ( $n = 8$ ), quartzite ( $n = 7$ ), chert ( $n = 5$ ), vesicular igneous ( $n = 1$ ), and "other" local material ( $n = 1$ ) were also represented.

The assemblage indicates an emphasis on later stages of secondary core reduction. Eighty-five percent of the whole flakes lack dorsal cortex and 70 percent of platforms are either single or multifaceted. Collapsed platforms represent another 12 percent of the assemblage. Flakes

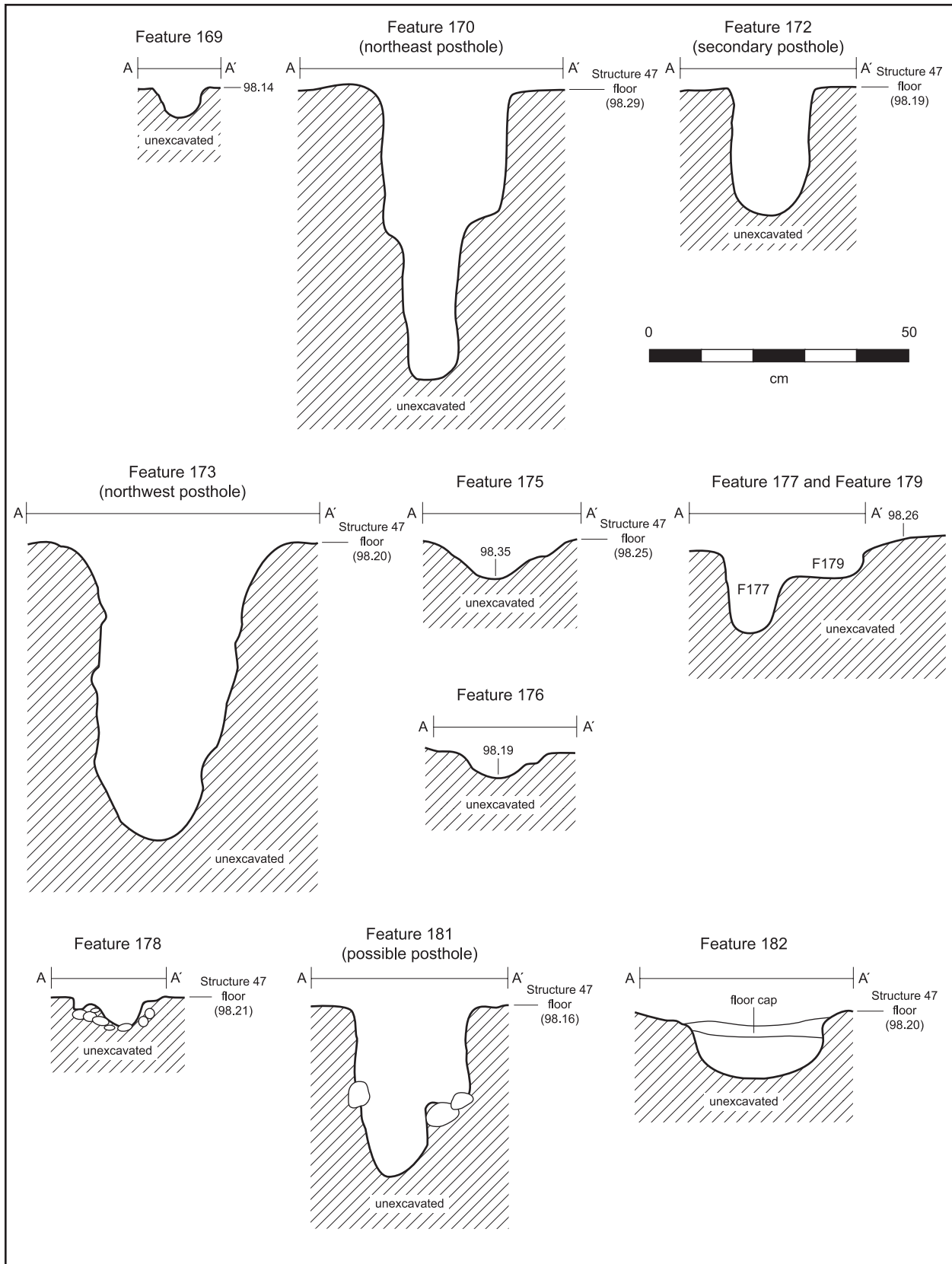


Figure 12.35. Structure 47 features: (a) Feature 169; (b) Feature 170; (c) Feature 172; (d) Feature 173; (e) Feature 175; (f) Feature 176; (g) Features 177 and 179; (h) Feature 181; (i) Feature 182.

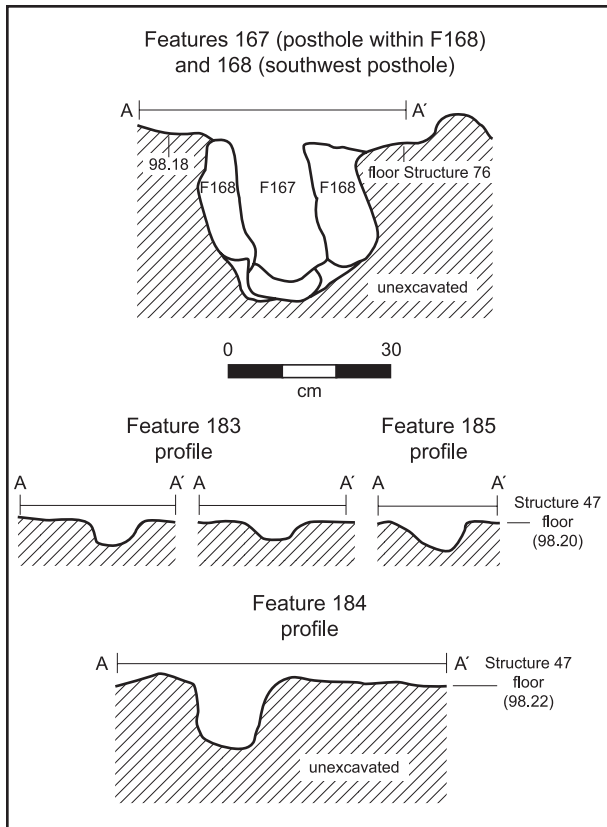


Figure 12.36. Features 183, 184, 185.

with retouched platforms indicate the manufacture of chalcedony, chert, and obsidian formal tools. An obsidian resharpening flake indicates that tools were refurbished in the structure. Three multiplatform cores manufactured from chalcedony and nonvesicular igneous material, as well as a hammerstone, were also recovered from the floor assemblage.

Unutilized flakes (77 percent) and unutilized small angular debris (16 percent) made up the majority of the assemblage. Three tools, a utilized core, a biface, and a projectile point, were recovered from this provenience. The core was manufactured from nonvesicular igneous material and exhibited two used edges. Both exhibited bidirectional rounding with striations, wear patterns consistent with prolonged cutting or sawing activities. The chalcedony biface fragment also exhibited bidirectional wear typical of cutting or sawing on hard media like bone or wood. The utilized edge is broken indicating that the tool was used and broken. A chalcedony projectile point

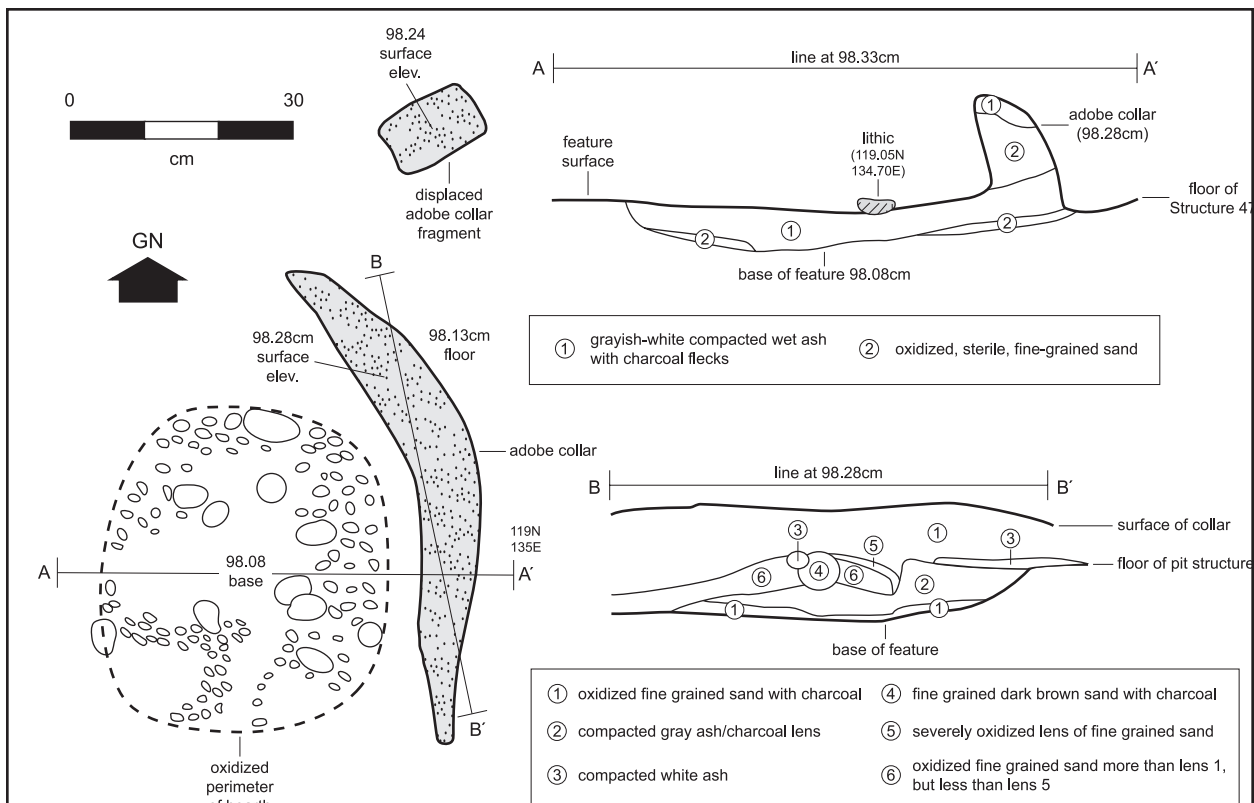


Figure 12.37. Structure 47, Feature 160, hearth.



Figure 12.38. Structure 47, Feature 163.

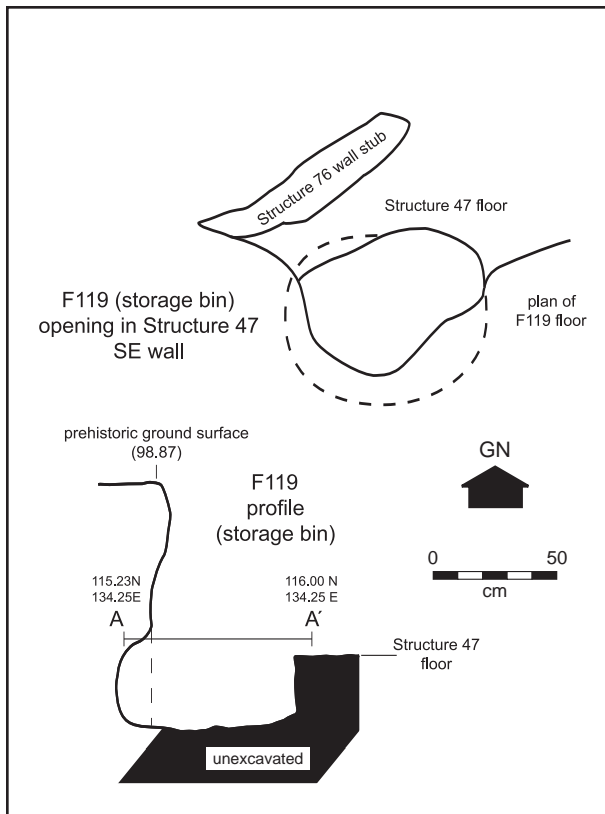


Figure 12.39. Structure 47, Feature 119.

fragment exhibited two lateral edges that were inconsistent or functionally incomplete—it is likely that this tool was broken during manufacture.

A two-hand mano was manufactured from vesicular basalt. Two fragments of indeterminate ground stone were manufactured from fine and coarse-grained rhyolite and represent two additional ground stone implements.

Sixty-four animal bones were recovered from the roof fall and floor fill (Table 12.10). These were predominantly small mammals; desert cottontail and black-tailed jackrabbit were the main identified species. Medium artiodactyl was more common in the roof fall and floor fill than other strata. This may reflect the observation that much of the bone from this layer is refuse. In other words, abandonment and burning were accompanied by a short interval of intentional refuse deposition. Other burned small mammal bone suggests consumption rather than scorching or grading from structure burning. This is further support for post-abandonment trash deposition.



Figure 12.40. Structure 47, Feature 119.

Structure 47 contained some floor contact debris and artifacts, but the dense clusters of cobbles and fire-cracked rock found on the floor of Structure 4 were absent in Structure 47. However, given that only one-third of the structure floor was undisturbed by Structure 76 construction, artifact frequencies suggest a more intense rate of refuse deposition immediately following abandonment. Recovered from the floor and floor features were 156 ceramics, 632 pieces of chipped stone, 4 ground stone artifacts, and 267 animal bones. One chipped stone artifact was a projectile point.

Pottery types recovered from the floor included Middle Rio Grande utility wares ( $n = 30$ ), a Northern Rio Grande jar sherd and a Jornada Brown rim sherd (Table 12.2). All sherds were identified as portions of jars. These jar sherds showed no evidence of soot-ing, although seven sherds exhibited interior ware indicative of cooking use. The sherds were not clustered, but occurred consistently throughout the limited floor space from Structure 47 that was not modified by the later construction of Structure 76.

Six hundred and thirty-two lithic artifacts were recovered from the floor or floor features in Feature 47 (Table 12.11). The majority of these artifacts were manufactured from three different material groups, which include chalcedony (44 percent), nonvesicular igneous materials (42 percent), and Jemez obsidian (11 percent). Smaller assemblages of quartzite ( $n = 13$ ), chert ( $n = 4$ ), and vesicular igneous material ( $n = 2$ ) were also recovered.

The two largest material categories, chalcedony and nonvesicular igneous materials, indicate that both early and later stages of secondary core reduction and formal tool manufacture occurred. Ninety-two percent of the whole chalcedony flakes lack dorsal cortex and 7 percent exhibit partial dorsal cortex. There is little evidence of primary core reduction. A single chalcedony flake with a retouched platform indicates that bifacial tool manufacture also occurred in the structure. Nonvesicular igneous materials indicate that primary decoration occurred, as well as secondary core reduction and bifacial tool manufacture.

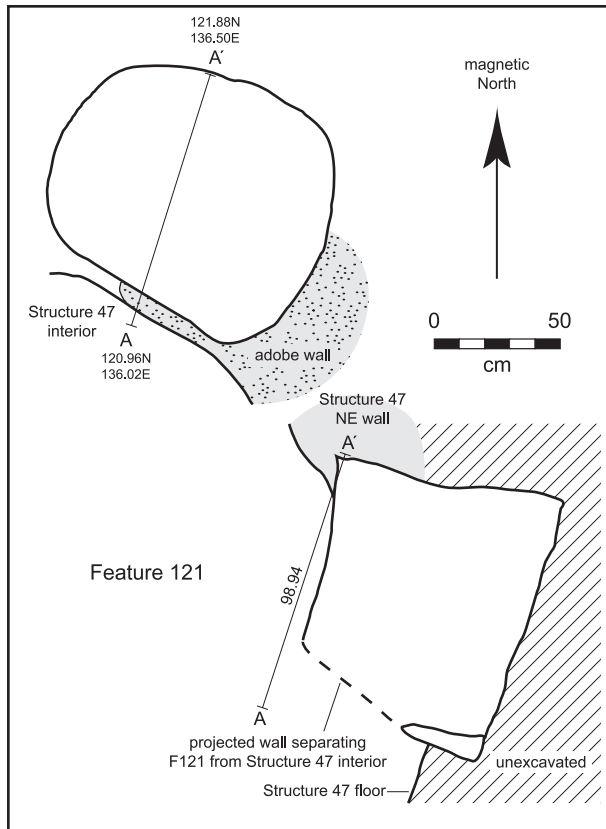


Figure 12.41. Structure 47, Feature 121.

Eighty-eight percent of the nonvesicular igneous materials lack dorsal cortex and 6 percent exhibit only partial cortex. Eighty-one percent exhibit single-facet platforms. Ten flakes with 100 percent dorsal cortex and 17 flakes with cortical platforms indicate that primary decortication also occurred here. One bifacial thinning flake provides evidence of formal tool manufacture. The obsidian assemblage, on the other hand, clearly indicates an emphasis on later stages of secondary core reduction and bifacial tool manufacture: 85 percent of the whole obsidian flakes lack dorsal cortex and eight flakes have retouched platforms. Seven multiplatform cores and one bifacial core were also recovered.

Unutilized flakes (79 percent) and unutilized small angular debris (14 percent) constitute the majority of the assemblage. Eighteen tools, however, were recovered from the floor in Feature 74. Nine marginally retouched tools and nine formal tools were identified. The marginally retouched artifacts are manufactured from Jemez obsidian ( $n = 4$ ), nonvesicular igneous materials ( $n = 4$ ), and chalcedony ( $n =$



Figure 12.42. Feature 121.



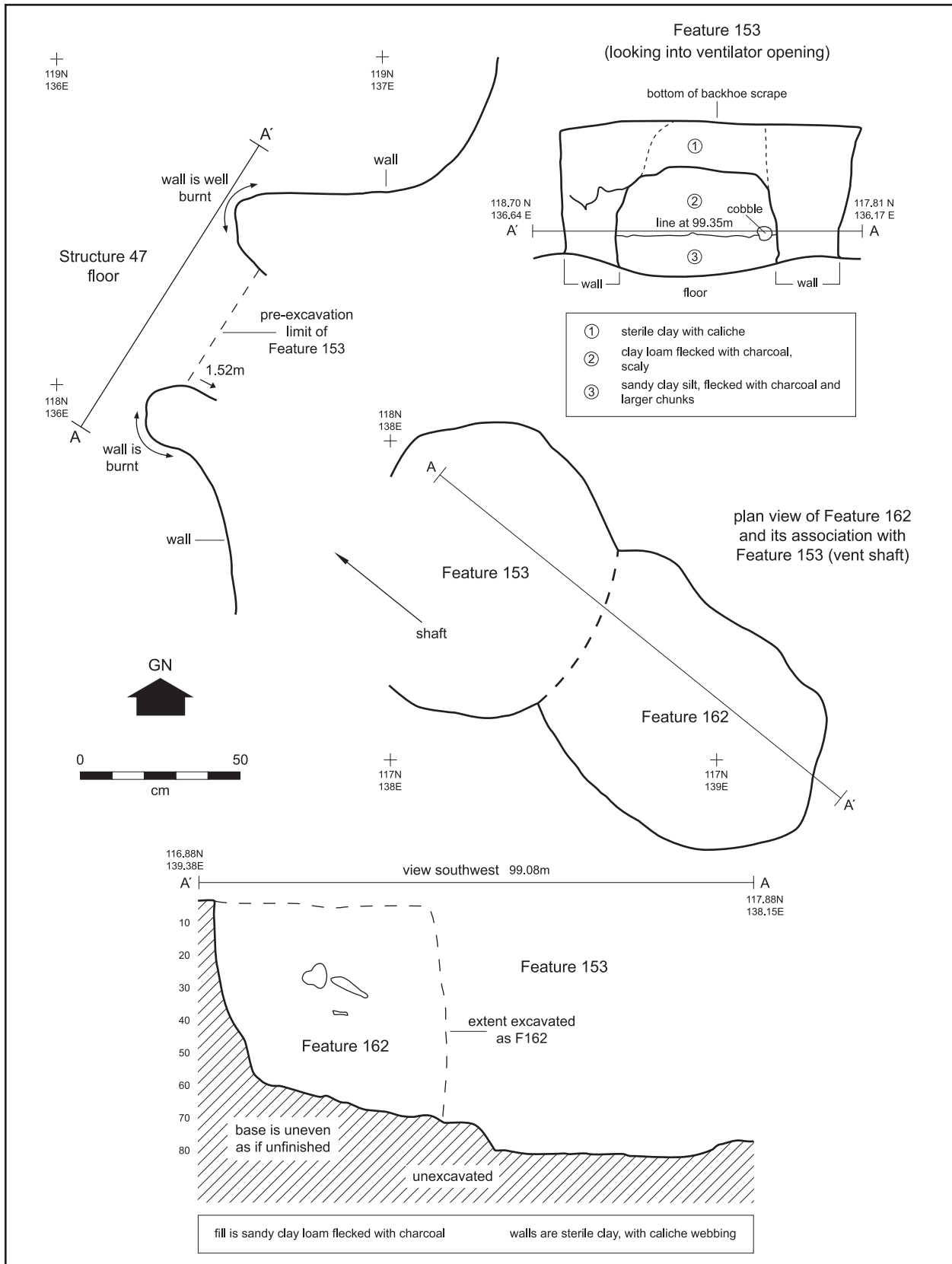


Figure 12.43. LA 6169, Structure 47, Features 153 and 162.



Figure 12.44. Structure 47, Features 153, 162.

1). Only two of these tools exhibit identifiable wear patterns—the chalcedony tool exhibited a battered edge and the obsidian tool had two utilized edges, one with unidirectional scraping wear and the other bidirectional cutting wear. Wear patterns are typical of use on hard media like bone or wood. Of the remaining marginally retouched tools, five exhibit functional edges, with edge angles ranging between 50 and 75 degrees. It is likely that these tools were used for scraping activities. Although no wear patterns were identified at 60x magnification, retouched edges were functionally complete, so it is likely that they were utilized and then discarded. Two additional retouched flake fragments lack evidence of utilization and edges were not functionally complete. These tools may have been broken during manufacture.

Four bifaces and four projectile points were manufactured from Jemez obsidian and a uniface was manufactured from chert. One complete biface and a biface fragment exhibit unidirectional scraping wear. The complete

tool was probably used until it no longer functioned for its intended task. The biface fragment had an incomplete utilized edge and may have been broken during use. The remaining two bifaces were complete but lacked evidence of use. A uniface fragment exhibited a convex edge with rounding and striations. It is likely that the tool was broken during use and discarded because the utilized edge was broken. Four projectile points, three complete and one fragment, were also recovered. One artifact identified as a projectile point exhibited three edges that were used for scraping. It is unclear if this is secondary use of a projectile point or if the tool was manufactured as a hafted scraper.

A single piece of unmodified turquoise was recovered from the floor. It was not in association with a specific feature or artifact cluster. It may have been deposited with the first episodes of refuse disposal.

Faunal remains were represented by 425 bones (Table 12.10) and were recovered from contact with the floor and from within floor or wall features. Overall, the species distribution

is not unusual. There is an emphasis on rabbit and other small to medium mammals. Medium to large artiodactyls are common, but less abundant. Some artiodactyl bones evidence processing, suggesting limited bone tool manufacture. Burned bone accounts for less than 50 percent, except for the medium-to-large artiodactyl bone, which had 53 percent burned from lightly burned to calcined. Bone recovered from the ash pit (Feature 153) was

rarely burned suggesting deposition into the pit and mixed with the ash from the hearth rather than deposited into the ash pit with ash from the hearth. This suggests that the ash pit was a receptacle for multiple (perhaps material or activity-specific) dumping episodes.

Unusual specimens include one sandhill crane bone, small birds (horned lark, western meadowlark, scaled quail), an ornate box turtle carapace fragment, and four different toad and

Table 12.11. LA 6169, Structure 47, Upper Fill, Roof Fall and Floor Fill, and Floor and Floor Features, Lithic Type by Material Group

**Upper Fill**

	Material Group										Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		N	%
	N	%	N	%	N	%	N	%	N	%		
Angular Debris	-	-	1	50	-	-	-	-	1	50	2	5
Flake	16	51.6	1	3.2	-	-	-	-	14	45.2	31	86
Hammerstone	-	-	-	-	1	100	-	-	-	-	1	2
Flake, Marg Retouch	-	-	-	-	-	-	1	100	-	-	1	2
Projectile Point	-	-	-	-	-	-	1	100	-	-	1	2
Total	16	44.4	2	5.6	1	2.8	2	5.6	15	41.7	36	100

**Roof Fall and Floor Fill**

	Material Group												Grouped Material Totals			
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		"Other" Local		N	%
	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Angular Debris	16	48.5	2	6.1	-	-	-	-	15	45.5	-	-	-	-	33	16
Flake	74	47.7	3	1.9	6	3.9	7	4.5	64	41.3	-	-	1	0.6	155	77
Flake, Sharpening	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Core, Multiplatform	2	66.7	-	-	-	-	-	-	1	33.3	-	-	-	-	3	1
Hammerstone	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Utilized Core Frag	-	-	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Projectile Point	1	100	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Biface	1	100	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	2	100	-	-	-	-	2	1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Total	94	47.2	5	2.5	7	3.5	8	4	83	41.7	1	0.5	1	0.5	199	100

**Floor and Floor Features**

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		N	%
	N	%	N	%	N	%	N	%	N	%	N	%		
Angular Debris	39	43.3	-	-	5	5.6	3	3.3	43	47.8	-	-	90	14
Flake	232	46.2	2	0.4	6	1.2	51	10.2	211	42	-	-	502	79
Flake, Bifacial Thin	1	20	-	-	-	-	3	60	1	20	-	-	5	<1
Flake, Sharpening	-	-	-	-	-	-	2	100	-	-	-	-	2	<1
Tested Rock	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	4	57.1	-	-	-	-	-	-	3	42.9	-	-	7	1
Core, Bifacial	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Flake, Marg Retouch	1	11.1	-	-	-	-	4	44.4	4	44.4	-	-	9	1
Projectile Point	-	-	-	-	-	-	7	100	-	-	-	-	7	1
Biface	-	-	-	-	-	-	1	100	-	-	-	-	1	<1
Uniface	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Mano, One-Hand	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Mano, Two-Hand	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
Shaped Stone	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Cobble with pigment	-	-	-	-	1	50	-	-	1	50	-	-	2	<1
Total	278	44	4	0.6	13	2.1	71	11.2	264	41.8	2	0.3	632	100

frog species. The sandhill crane tibiotarsus could have been stockpiled for tool manufacture, which was a common use for other large birds. Toads and frogs are interesting because they may not be natural occurrences and are therefore intentionally deposited on the floor or within the structure floor features (see Akins, Chapter 20, for more discussion of frog and toad distributions).

*Subsistence Activities.* Evidence of subsistence or daily maintenance and productive activities is relatively slim. Direct evidence in the form of ethnobotanical data were inconclusive. Potential economic species identified by the ethnobotanical study included cultivars *Zea mays* and *Cucurbita* and wild plants *Chenopodium* and *Portulaca* (see Chapter 23, McBride and Toll). These few species occurred in low frequency and were probably related to background or secondary deposition rather than processing and consumption within the structure.

Pollen analysis identified cheno-ams, *Zea mays*, Cactaceae, and *Cylindropuntia* cactus pollen from storage Features 119 and 121 that may remain from pre-consumption storage (see Chapter 24, R. Holloway). Otherwise associations between features and species are weak and difficult to attribute to processing or consumption. Much of the pollen may remain from background or natural introduction or contamination.

Wood charcoal identification yielded juniper and willow with lesser amounts of four-wing saltbush, *Quercus*, and *Pinus edulis*. Wood charcoal indicates that terraces and their alluvial margins were used for fuel wood gathering. These species were similar to the array recovered from Structure 4 indicating little change in available fuelwood or fuelwood gathering behavior, if the structures are not contemporary.

Faunal remains recovered from within the structure may not necessarily remain from occupants' subsistence activities. In general, the faunal remains display a focus on small and medium mammals that could be obtained locally, such as from fields or in woodland settings. Other productive activities indicated by bone artifacts were mat weaving and weaving

or leather work. Typically, the area between the hearth and the ventilator shows the most evidence of domestic activities in Early Developmental pit structures in the Middle Rio Grande (Schmader 1994). Structure 47 did not yield spatial artifact or foodstuff patterning that could be attributed to formal or specialized processing areas.

*Abandonment.* Based on the available evidence, a provisional abandonment sequence can be suggested. Low frequency and non-patterned distribution of floor artifacts indicate that Structure 47 was cleaned out at abandonment, except for limited floor refuse and the dense debris deposit in Feature 152. The ash and refuse in Feature 152 may have been intentionally deposited at abandonment, rather than remaining from terminal domestic maintenance activities. The vent tunnel was plugged with soil and refuse, including a pigment-covered cobble, a rhyolite slab, and an antler fragment. The major wood structural elements were removed. The closing fill was partly removed from the roof and partly collapsed into the structure. The remaining reed closing material and secondary leaners were put into the structure and burned. The structure then filled naturally, until Structure 76 was constructed within its western two-thirds.

For the Dolores Project, burned pit structures were expected to yield the heaviest or most abundant floor assemblages. Burning was interpreted as a radical display of energy consumption that destroyed valuable resources, such as timber, and removed the structure from future reuse by the group or immediate descendants. Why burning occurred could not be addressed from the structure floor assemblage and stratigraphy, but logically it could have been associated with pest control, social or economic calamity, or it may reflect a sanctioned decommissioning of the structure with few negative associations. The combined activities of salvaging the major elements and burning of lesser elements suggests a planned and orderly abandonment. Following the burning of the remaining structural elements, abandonment of the structure

and the site is indicated by the absence of prolonged or intensive trash discard episodes in the middle and upper stratigraphic levels.

*Summary.* Structure 47 was a subrectangular, deep pit structure with 24 intramural features. It was occupied sometime during the late 700s or early 800s. Floor area of 24.3 sq m would have accommodated between five to seven individuals comfortably. Intramural space divisions are unclear because the majority of the floor was cleared by the intrusive Structure 76 construction.

The size, depth, and presence of at least one intramural hearth suggests that Structure 47 was occupied during cold weather, if not year-round. Deep pit structures have high insulative properties and their internal temperature can be kept at a habitable level with minimal thermal heating. Cold weather occupation could include winter, early spring, and late fall. The lack of extramural structures or activity areas indicate that extensive warm weather occupation may have been minimal or also was focused in the pit structure. Just as the pit structure holds thermal heat, it would also insulate from solar heat during the warmest times of the year. Therefore, pit structure depth cannot only be taken as an indicator of cold weather occupation. Long-term year-round occupation is suggested because there are storage features in the pit structure. The abundance of utility jar sherds in the structure that lacked sooting and evidence of cooking suggest pot storage for daily use.

The hearth/ash pit/ventilator complex was aligned to the east with no sipapu evident to the north of the hearth. East orientation was fairly common in Early Developmental Rio Grande pit structures (Lakatos 2000; Schmader 1994). Structure 47 functioned primarily as a residence. Possible ritual activities associated with abandonment and following abandonment include placement of a stag horn in the ventilator tunnel, a dense concentration of refuse associated with the ash pit, burning of the non-vertical structure elements, and the small-scale, but immediate refuse disposal on the floor. The meaning of these potential ritual offerings or

events is not known, especially at the individual structure level. Examination of abandonment behaviors for all Early Developmental structures from this project may produce patterns from which shared ritual and social behaviors may be inferred.

#### *Late Developmental Period Component*

One pit structure, Structure 76, was dated by associated pottery and archaeomagnetic dating to the Late Developmental period. It is the only Late Developmental period residential structure encountered during the project. A Late Developmental period component was encountered at LA 6170 that consisted of a meal room or bin within the upper fill of an Early Developmental period pit structure, Structure 5.

**Structure 76.** Structure 76 was a small Late Developmental pit structure built within the western two-thirds of Structure 47, 300 to 350 years after it was abandoned. The structure was circular in plan with a diameter ranging from 3.80 to 4.50 m and well-preserved south and west walls from 0.60 to 0.90 m in height. It was in the east-central portion of Area 2. Numerous extramural features occur to the north and south of Structure 76, but none could be unequivocally assigned to the Late Developmental period (Figs. 12.45, 12.46).

Excavation revealed no evidence of structural remodeling. Construction of Structure 76 used the existing south and west walls of Structure 47. The east and north walls were constructed of adobe, which held back the natural fill deposit that had accumulated in Structure 47. Low floor feature count and diversity suggests the occupation of Structure 76 was short. A lack of remodeling evidence indicates a single occupation episode. Following abandonment, Structure 76 was partly filled with Late Developmental period refuse and one adult and two children were interred in the floor fill and along the upper north wall. The Late Developmental refuse is capped by a Coalition period deposit that indi-

cates that the depression continued to be used into the thirteenth century AD.

Archaeomagnetic dating of the central hearth yielded an intercept date of AD 1205 (PB-1160). This agrees with the ceramic manufacture dates, although it suggests a terminal Late Developmental occupation.

The floor and floor fill ceramic assemblage is dominated by Kwahe'e Black-on-white and plain and corrugated gray utility pottery. These are diagnostic of the Late Developmental period. Intrusive pottery types from the south and west occur in low numbers.

*Excavation Strategy.* Discovery and initial excavation of Structure 76 initially focused on one pit structure until it was apparent that two superimposed structures were present. Because most of the early stratigraphic definition occurred in the north and west portions of what was eventually identified as Structure 76, stratigraphic distinctions relative to structure abandonment, collapse, and reuse for trash disposal were made during initial systematic excavation. Grid 120N/132E in the northwest quadrant and 117N/133E in the southeast quadrant were systematically excavated to within 15 cm of the structure floor. The remaining area within the structure was removed mechanically or by hand in gross 40- to 60-cm-thick levels to within 30 to 40 cm of the structure floor. This lower fill was removed in four quadrants. Each quadrant had at least one or two 20-cm levels excavated and screened through 1/4 inch mesh. The lowest 5 to 15 cm of structure fill was excavated according to project procedures for floor fill and floor deposits within pit structures. Cross trenches along the 120N and 133E grid lines provided stratigraphic profiles. Floor features were excavated and recorded following standard project procedure. Excavators assessed if a floor feature was used by Structure 76 or Structure 47 occupants based on fill, position within the structure, and associated artifacts. Final structure recording followed standard project methods.

*Stratigraphy.* Four strata were recognized within Structure 76. These strata reflect different temporal divisions within the site occupation history and may also inform on the con-

struction and abandonment of the structure (Table 12.12).

Tables 12.13 through 12.15 show the artifact distributions for Stratum I, Stratum III, Stratum IV, and Stratum V. Pottery type distributions for structure collapse and trash fill and floor fill and roof fall are very similar. They are predominantly Kwahe'e Black-on-white for decorated pottery and a mix of Northern and Middle Rio Grande utility ware. These are expected types for a Late Developmental deposit indicating that the bulk of the refuse discarded into Structure 76 was roughly contemporaneous with the structure occupation. Another slightly later Late Developmental period pit structure or surface structure must have been located within the existing highway prism. The archaeomagnetic date from the Structure 76 hearth indicates an early 1200s occupation. This would indicate that the second Late Developmental component must have also occurred in the early 1200s, as well. The abundant domestic refuse indicates that the later Late Developmental occupation was residential. The close fit for ceramics from all lower and middle levels in Structure 76 could have only resulted from rapid trash-filling because any significant time lapse should have resulted in the accumulation of Santa Fe Black-on-white pottery, which succeeded Kwahe'e Black-on-white. It is as though the structure was abandoned and immediately filled.

Chipped and ground stone artifacts were recovered in low frequency ( $n = 128$ ) from the upper fill (Table 12.14). The chipped stone reflect core reduction employing the local lithic raw materials. The few tools present indicate some refuse was from processing or manufacture activities. The ground stone assemblage recovered from this provenience is extremely fragmentary. The only complete artifacts are a fine-grained rhyolite slab metate and a fine-grained rhyolite pick. The remaining fragments represent an indeterminate mano manufactured from andesite, three indeterminate metates manufactured from welded tuff, "other" igneous, and fine-grained sandstone. An indeterminate ground stone fragment of



Figure 12.45. Structure 76.

basalt represents another implement. The fragmentary ground stone is also indicative of trash disposal.

Heavy trash deposition is indicated by the 887 lithic artifacts (Table 12.14). A full range of core reduction and tool production debris and discarded tools are present. Ground stone was also fragmentary as was observed for the upper levels. A heavy emphasis on andesite/basalt/rhyolite with limited obsidian use suggests expedient tool production and less of a focus on hunting implements. This supports the observation that roof fall and floor fill were heavily mixed with domestic refuse.

The faunal assemblage from the structure collapse, trash fill, floor fill, and roof fall shows a similar distribution pattern to the pottery (Table 12.15). A full range of species are represented by a high frequency of broken elements. The assemblage is typical of a refuse deposit, which includes abundant broken and burned elements. The faunal data support the observation that Structure 76 was filled rapidly and almost immediately after abandonment.

Use of Structure 76 as a cemetery followed its abandonment. Features 81 and 82 were interred in trash-laden refuse suggesting that the open pit remained an important part of on-site or near-community activities. Feature 49 was a 2.5-year-old child placed along the structure wall. All three burials were associated with grave goods. Associations between refuse and the dead are an important part of historic pueblo site structure and regularly are found in Late Developmental and later aged contexts.

*Description.* Structure 76 was a deep, straight-walled pit structure excavated into and incorporating the north and west walls of Structure 47 (Fig. 12.45, 12.46). It had an oval outline that measured 4.50 m north-south and 3.50 m east-west with a 0.90 m maximum depth below the prehistoric occupation surface (top of Stratum III) and a 1.10 m maximum depth below the modern ground surface. Stratigraphy indicated that it was filled by a combination of natural process, wall and roof collapse after abandonment, and intentional trash-filling by subsequent Late Developmental and Coalition

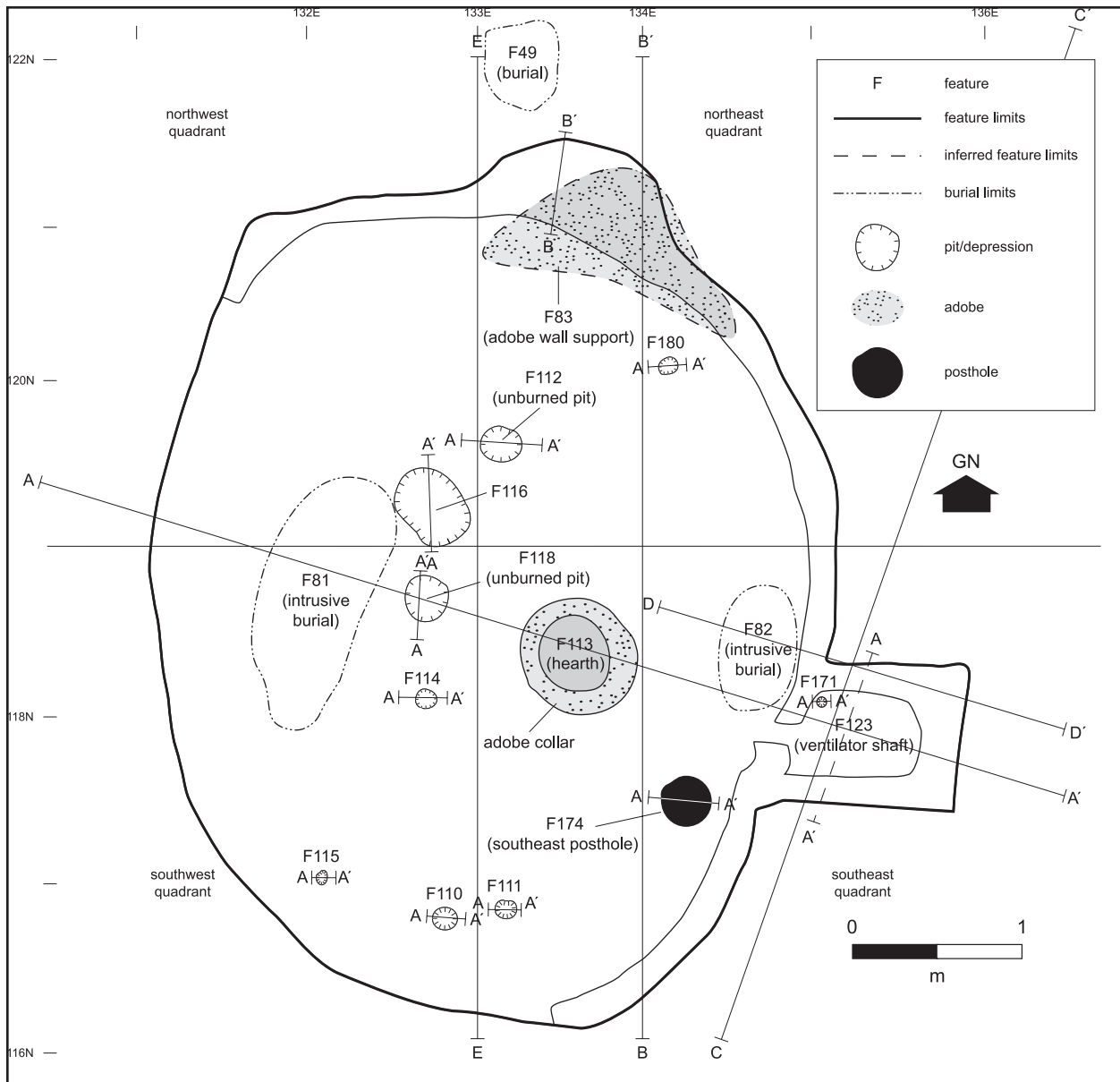


Figure 12.46. Structure 76.

period site residents. Dense, but jumbled clumps or clods of adobe indicate substantial retaining wall construction and collapse on top of a layer of roofing soil or cover layer that was mixed with abundant river cobbles. Artifacts recovered from on or near the floor appear to be de facto with few artifacts associated directly with activities that occurred within the structure. The floor area was 12.6 sq m. The structure had ten intramural features that included one posthole, a central hearth, one possible pot rest, and seven miscellaneous small pits or divots. Wall features included a ventilator shaft and

tunnel and a buttress along the north wall.

Of additional importance are the skeletal remains associated with Structure 76. A 2-year-old child (Feature 49) was interred along the upper wall of Structure 47 and outside the north wall of Structure 76. The child was buried with a Kwahe'e Black-on-white canteen. Another child (Feature 82), 5 to 6 years old, was recovered from floor fill and Stratum IV. The child was buried with a Kwahe'e Black-on-white bowl. An 18- to 19-year-old young adult male (Feature 81) was buried in Strata IV and V west of Feature 82. The central hearth (Feature



Table 12.12. LA 6169, Structure 76 Stratigraphic Descriptions (Top to Bottom)

Designation	Description	Munsell Color Range	Comments
I	silty loam and sand; 20 to 60 cm thick	Dark brown; 10YR 4/3 (dry)	The upper 10 cm of this stratum is similar to the site Stratum 1, otherwise this level has a heavy concentration of refuse from the Coalition and late Developmental periods. Density and frequency of artifacts indicates long term trash deposition.
III	silty loam and sand; 10 to 40 cm thick	Dark brown; 10YR 4/3 (dry)	Similar to Stratum I except for an increase in beam and mat impressed adobe, ash, charcoal, and abundant artifacts from the late Developmental period. This stratum and Stratum IV indicate that there was a late Developmental occupation succeeding Feature 76 abandonment.
IV	silty loam, no gravel, cobbles intrusive from structure	Yellowish brown; 10YR 5/4 (dry)	Dense concentrations of unburned adobe indicates that this is a wall fall layer primarily derived from the collapse of the north and east walls. These walls were constructed from puddled adobe and retained the Feature 47 structure fill. This adobe was 5 to 10 cm thick and showed no evidence of burning. This layer caps and is mixed into the roof fall or closing layer that is above the floor.
V	sandy loam, non- plastic when moist; 10 to 30 cm thick	Brown; 10 YR 4/3 (wet)	Lower structure fill 10 to 30 cm thick, may include roof fall; charcoal and artifacts consistently occur in association with a dense layer of cobbles that were mixed into the roof cap or lying on top of the roof when the structure was abandoned and dismantled. This layer was lying on the floor or was separated from floor contact by a thin silty lens that was charcoal-stained. Three partial vessels recovered in a dense ash and charcoal concentration suggesting discrete dumping episodes immediately after abandonment.

113) was located between the two burials.

*Construction.* Evidence of construction is in the form of walls, floor, and post-abandonment structure fill. Structural wood and organic roofing material were missing from Structure 76 fill. Some superstructure evidence was preserved in the pressed adobe that was encountered.

The structure walls were of two types. The south and west walls were basically the same as the Structure 47 south and west walls. This reused, natural soil wall accounted for 40 percent of the structure perimeter. There was no remaining wall plaster or indications that the native soil wall had been prepared or modified. The remaining east and north walls were made of puddled adobe that was layered or packed against the fill of Structure 47. In other

words, the rough outline of Structure 76 was excavated and then the adobe interior wall was built to retain the less consolidated Structure 47 fill. This adobe wall was from 5 to 12 cm thick and was recovered as clumps or blocks that had maximum dimensions ranging from 12 to 25 cm. Presumably, this adobe retaining wall would have been the same height as the native wall or 1.0 to 1.1 m high. The adobe wall was mostly intact, but only 30 to 40 cm high along its northern perimeter. At the northwest wall junction a bond between the two walls was formed with packed adobe.

The only evidence that could be confidently associated with roof construction was the silty loam mixed with cobbles recovered from Stratum V. This soil/cobble mix was typical of the closing material encountered in pit struc-

Table 12.13. LA 6169, Structure 76, Ceramic Type Distribution

	Feature 76 Floor	Feature 76 Roof and Floor Fill	Structure Collapse and Trash	Total
Unpainted (undifferentiated white)	-	6 0.7%	-	6 0.4%
Mineral paint undifferentiated	-	1 0.1%	-	1 0.1%
Unpainted undifferentiated	8 2.6%	31 3.4%	5 3.1%	44 3.2%
Mineral paint (undifferentiated)	1 0.3%	1 0.1%	-	2 0.1%
Kwahe'e B/w (solid designs)	22 7.2%	6 0.7%	5 3.1%	33 2.4%
Kwahe'e B/w (thin parallel line)	2 0.7%	-	-	2 0.1%
Kwahe'e B/W (thick parallel lines)	-	-	1 0.6%	1 0.1%
Kwahe'e B/w (hatchured designs)	2 0.7%	6 0.7%	-	8 0.6%
Kwahe'e B/w (solid and hatchure)	1 0.3%	-	-	1 0.1%
Kwahe'e B/w (checkerboard)	2 0.7%	-	1 0.6%	3 0.2%
Kwahe'e B/w	1 0.3%	42 4.6%	-	43 3.1%
Santa Fe B/w	3 1.0%	8 0.9%	2 1.2%	13 0.9%
Galisteo B/w	2 0.7%	20 2.2%	-	22 1.6%
NRG Plain rim	3 1.0%	6 0.7%	-	9 0.7%
NRG Plain body	56 18.4%	284 31.0%	29 17.9%	369 26.7%
NRG Wide Neckbanded	-	1 0.1%	-	1 0.1%
NRG Wide Neckbanded (wiped or undulated)	-	1 0.1%	-	1 0.1%
NRG Indented Corrugated	16 5.2%	16 1.7%	-	32 2.3%
NRG Plain Corrugated	30 9.8%	43 4.7%	10 6.2%	83 6.0%
NRG Smearred Plain Corrugated	28 9.2%	110 12.0%	34 21.0%	172 12.4%
NRG Smearred Indented Corrugated	-	5 0.5%	-	5 0.4%
NRG Mudware	-	1 0.1%	-	1 0.1%
MRG Plain rim	1 0.3%	5 0.5%	2 1.2%	8 0.6%
MRG Plain body	88 28.9%	206 22.5%	49 30.2%	343 24.8%
MRG Wide Neckbanded	1 0.3%	-	-	1 0.1%

Table 12.13. Continued.

	Feature 76 Floor	Feature 76 Roof and Floor Fill	Structure Collapse and Trash	Total
MRG Wide Neckbanded (wiped)	1 0.3%	-	1 0.6%	2 0.1%
MRG Indented Corrugated	2 0.7%	1 0.1%	1 0.6%	4 0.3%
MRG Plain Corrugated	-	-	1 0.6%	1 0.1%
MRG Smearred Plain Corrugated	2 0.7%	-	1 0.6%	3 0.2%
MRG Polished gray	1 0.3%	-	-	1 0.1%
MRG Low Relief Corrugated	-	2 0.2%	-	2 0.1%
Unpainted undifferentiated	3 1.0%	51 5.6%	11 6.8%	65 4.7%
Mineral Paint (undiff)	5 1.6%	15 1.6%	2 1.2%	22 1.6%
Red Mesa B/w	-	1 0.1%	-	1 0.1%
Escavada solid designs	4 1.3%	5 0.5%	-	9 0.7%
Gallup B/w	1 0.3%	1 0.1%	-	2 0.1%
San Marcial B/w	3 1.0%	-	1 0.6%	4 0.3%
White Mountain Red (undifferentiated)	-	2 0.2%	-	2 0.1%
Wingate B/r	-	4 0.4%	-	4 0.3%
Puerco B/r	2 0.7%	-	-	2 0.1%
Slipped Red over white paste (Tallahogan-like)	-	6 0.7%	-	6 0.4%
Unpainted with Chupadero paste	-	1 0.1%	-	1 0.1%
Chupadero B/w (solid design)	-	1 0.1%	-	1 0.1%
Chupadero B/w (hatchured design)	-	1 0.1%	-	1 0.1%
Chupadero B/w (hatchured and solid design)	-	3 0.3%	-	3 0.2%
Jornada Brown body	2 0.7%	1 0.1%	1 0.6%	4 0.3%
Unpainted Socorro paste	1 0.3%	-	-	1 0.1%
Socorro B/w	-	1 0.1%	1 0.6%	2 0.1%
Socorro B/w (solid designs)	8 2.6%	8 0.9%	2 1.2%	18 1.3%
Socorro B/w (hatchured designs)	2 0.7%	8 0.9%	1 0.6%	11 0.8%
Socorro B/w (hatchured and solid designs)	1 0.3%	5 0.5%	1 0.6%	7 0.5%
Total	305	916	162	1383

NRG = Northern Rio Grande; MRG = Middle Rio Grande

Table 12.14. LA 6169, Structure 76, Structure Collapse and Upper Trash Fill, Roof Fall and Floor Fill, and Floor and Floor Features

	Material Group																Grouped Material Totals					
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		"Other" Igneous		Sandstone			"Other" Local				
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N	%	N	%	
Angular Debris	77	39.8	3	1.5	4	2	5	2.5	103	53.3	1	0.5	-	-	-	-	-	-	-	-	193	19
Flake	366	50.9	24	3.3	25	3.4	16	2.2	287	39.9	-	-	-	-	-	-	1	0.1	-	-	719	70.8
Flake, Bifacial Thin	2	66	-	-	1	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	<1
Flake, Sharpening	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Hammerstone flake	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Tested Rock	3	60	-	-	-	-	2	40	-	-	-	-	-	-	-	-	-	-	-	-	5	<1
Core, Multiplatform	6	40	2	13.3	-	-	-	-	7	46.6	-	-	-	-	-	-	-	-	-	-	15	1.4
Core, Single Platform	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Hammerstone	-	-	-	-	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	<1
Pecking Stone	-	-	-	-	3	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	<1
Flake, Utilized	-	-	1	4.5	-	-	11	50	10	45.4	-	-	-	-	-	-	-	-	-	-	22	2.1
Flake, Marg Retouch	1	25	-	-	-	-	2	50	1	25	-	-	-	-	-	-	-	-	-	-	4	<1
Projectile Point	-	-	-	-	-	-	4	100	-	-	-	-	-	-	-	-	-	-	-	-	4	<1
Biface	-	-	-	-	-	-	3	100	-	-	-	-	-	-	-	-	-	-	-	-	3	<1
Uniface	-	-	-	-	-	-	-	-	2	100	-	-	-	-	-	-	-	-	-	-	2	<1
Unknown Ground Stone	-	-	-	-	-	-	-	-	16	100	-	-	-	-	-	-	-	-	-	-	16	1.4
Mano, Unknown	-	-	-	-	1	12.5	-	-	1	12.5	5	62.5	-	-	-	-	1	12.5	-	-	8	<1
Metate, Unknown	-	-	-	-	-	-	-	-	1	14.2	1	14.2	4	57.1	1	14.2	-	-	-	-	7	<1
Metate Slab	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Expedient handstone	-	-	-	-	1	50	-	-	1	50	-	-	-	-	-	-	-	-	-	-	2	<1
Cobble with pigment	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Pick	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Grooved Maul	-	-	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Total	455	44.8	30	2.9	39	3.8	44	4.3	432	42.5	8	<1	4	<1	2	<1	1	<1	1	<1	1015	100

Table 12.15. LA 6169, Structure 76, Fauna Summary

	Structure Collapse, Trash		Features 81, 82 (Burials)		Roof Fall and Floor Fill		Floor		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
Unknown	-	-	-	-	-	-	1	0.8%	1	0.2%
Small mammal/med-lrg bird	-	-	-	-	2	0.8%	-	-	2	0.4%
Small mammal	4	9.5%	30	20.8%	8	3.3%	15	12.4%	57	10.3%
Small-medium mammal	-	-	27	18.8%	1	0.4%	1	0.8%	29	5.2%
Medium mammal	1	2.4%	-	-	-	-	-	-	1	0.2%
Medium to large mammal	12	28.6%	20	13.9%	18	7.3%	9	7.4%	59	10.7%
Large mammal	3	7.1%	5	3.5%	13	5.3%	4	3.3%	25	4.5%
Black-tailed prairie dog	-	-	-	-	2	0.8%	1	0.8%	3	0.5%
Botta's pocket gopher	-	-	6	4.2%	3	1.2%	-	-	9	1.6%
Yellow-faced pocket gopher	2	4.8%	3	2.1%	18	7.3%	4	3.3%	27	4.9%
Ord's kangaroo rat	-	-	-	-	-	-	1	0.8%	1	0.2%
Banner-tailed kangaroo rat	-	-	-	-	1	0.4%	1	0.8%	2	0.4%
<i>Peromyscus</i> sp.	-	-	15	10.4%	1	0.4%	1	0.8%	17	3.1%
Woodrats	-	-	1	0.7%	5	2.0%	-	-	6	1.1%
White-throated woodrat	-	-	3	2.1%	1	0.4%	-	-	4	0.7%
Large woodrat	-	-	-	-	-	-	1	0.8%	1	0.2%
Small rodent	-	-	3	2.1%	-	-	-	-	3	0.5%
Medium to large rodent	-	-	-	-	4	1.6%	-	-	4	0.7%
Desert cottontail	6	14.3%	14	9.7%	32	13.0%	26	21.5%	78	14.1%
Black-tailed jackrabbit	3	7.1%	3	2.1%	21	8.5%	13	10.7%	40	7.2%
Medium carnivore	-	-	-	-	1	0.4%	-	-	1	0.2%
Dog	-	-	-	-	1	0.4%	-	-	1	0.2%
Medium artiodactyl	5	11.9%	5	3.5%	80	32.5%	26	21.5%	116	21.0%
Deer or elk	-	-	-	-	-	-	1	0.8%	1	0.2%
Mule deer	2	4.8%	1	0.7%	11	4.5%	8	6.6%	22	4.0%
Pronghorn	3	7.1%	3	2.1%	7	2.8%	2	1.7%	15	2.7%
Bighorn sheep	-	-	-	-	4	1.6%	2	1.7%	6	1.1%
Large bird	-	-	2	1.4%	5	2.0%	1	0.8%	8	1.4%
Medium-large bird	-	-	3	2.1%	2	0.8%	-	-	5	0.9%
Prairie falcon	-	-	-	-	1	0.4%	-	-	1	0.2%
Turkey	-	-	-	-	2	0.8%	1	0.8%	3	0.5%
Painted turtle	-	-	-	-	1	0.4%	2	1.7%	3	0.5%
Plains or Woodhouse's toad	1	2.4%	-	-	-	-	-	-	1	0.2%
Woodhouse's toad	-	-	-	-	1	0.4%	-	-	1	0.2%
Group Total	42	100.0%	144	100.0%	246	100.0%	121	100.0%	553	100.0%
Fetal, neonate	-	-	-	-	-	-	1	.8%	1	0.2%
Immature (1/2-2/3 grown)	-	-	-	-	2	0.8%	1	0.8%	3	0.5%
Light/scorch	2	4.8%	1	0.7%	9	3.7%	6	5.0%	18	3.3%
Light to heavy	2	4.8%	-	-	6	2.4%	2	1.7%	10	1.8%
Heavy or black	2	4.8%	3	2.1%	15	6.1%	3	2.5%	23	4.2%
Heavy to calcined	1	2.4%	1	0.7%	2	0.8%	-	-	4	0.7%
Calcined	2	4.8%	3	2.1%	3	1.2%	1	0.8%	9	1.6%
Complete	5	11.9%	19	13.2%	22	8.9%	24	19.8%	70	12.7%
>75% complete	2	4.8%	3	2.1%	11	4.5%	3	2.5%	19	3.4%
50-75% complete	-	-	4	2.8%	6	2.4%	-	-	10	1.8%
25-50% complete	5	11.9%	25	17.4%	31	12.6%	19	15.7%	80	14.5%
<25% complete	30	71.4%	93	64.6%	176	71.5%	75	62.0%	374	67.6%

tures of Early and Late Developmental ages. Some of the mat- or willow-impressed adobe observed in Stratum IV may relate to roof construction, but it could not be positively associated. Postholes are lacking from Structure 76. In their absence, we must assume that roof timbers were laid flat across the width of the struc-

ture from end to end. A second crossing set of timbers may have been laid on the first with closing material placed on top of this lattice. If the structure were only 1.10 to 1.20 m high there would have been low head space, which would have been inconvenient for all but sleeping and limited domestic activities. For

this reason it can be suggested that Structure 76 was not built as a year-round residence.

The floor was primarily unprepared. The compact floor consisted of the same native soil into which the structure was excavated. Extent of preparation may have been to only moisten, smooth, and float the fine particles. The floor is formed directly on top of a gravel layer that may be an ancient terrace deposit. Condition of the floor was patchy and undulating rather than flat and level. The floor at the junction with the wall slopes up rapidly. The floor is slightly basin-shaped with the lowest elevation at the central hearth.

*Floor and Wall Features.* Structure 76 had ten intramural features that included one possible posthole, a central hearth, seven small unburned pits, and a remnant ventilator tunnel. Three human burials, two within the structure floor fill (Features 81 and 82) and one outside the north wall (Feature 49), were exposed during the excavation. Table 12.16 provides the intramural feature descriptions and data.

Floor features are arranged in an arc from the south wall to the north wall (Fig. 12.45). Outside the arc to the west are Feature 174, a possible posthole (Fig. 12.47) and Features 110, 114, and 171, which are small sand-filled pits (Figs. 12.48). To the east of the arc is the central hearth. This arc of features divides the structure into east and west halves. Also of interest is the placement of the human burials within the structure. They are roughly equidistant from the east and west of the central hearth on an east-west axis. Feature 82 burial is just slightly north of the ventilator opening along the east wall.

The central hearth and ash pit are on an axis with the ventilator tunnel (Feature 113) (Fig. 12.46). These three features are aligned at 120 degrees east of magnetic north. East and southeast structure/feature orientations are the common floor plan in the Middle and Northern Rio Grande valley (Frisbie 1967; Schmader 1994; Boyer 1994).

The central hearth had an adobe collar and a basin profile (Figs. 12.49, 12.50). It contained a yellowish brown (10YR 5/4) sand and char-

coal layer and a lower ash layer remaining from the last use of the hearth. Two flaked stone artifacts, a ground stone fragment, and four sherds including Kwahe'e and Socorro Black-on-white types were recovered from the hearth. The hearth was well-used, but showed no signs of remodeling. An archaeomagnetic sample collected from the central hearth yielded an intercept date of AD 1205 (PB-1160). This date fits well with the pottery type distribution. A <sup>14</sup>C date was submitted from floor contact within the southwest quadrant. A cal AD 670 to 1040 two-sigma date range was returned (Beta-149021). This range is too early for Structure 76 and may reflect the "old wood" problem. Wood from the floor was intentionally submitted to see if "old wood" was used by Late Developmental residents. The results strongly suggest that it was the case.

Other floor features included Features 111, 112, 115, 116, 118, and 180. These were a variety of small unburned pits ranging in size from divots to potrests. Feature profiles are shown in Figure 12.48.

Feature 83 was a buttress or external wall support made from adobe and Stratum 3. It was built into the north wall and was not duplicated along any of the other walls. It was built on top of pit features that were associated with the Structure 47 occupation. It had a triangular plan and a basin-shaped top (Fig. 12.48). No similar features have been described for Late Developmental pit structures in the Cochiti area (Lange 1968a).

The other wall feature was the ventilator tunnel (Feature 123) (Fig. 12.48). The ventilator tunnel was excavated into Structure 47 fill with evidence of adobe reinforcing at the mouth and just inside the tunnel. Evidence for an adobe-lined shaft may have been observed in the excavation of Structure 47 as a dense area of adobe melt and cobbles in the southeast quadrant coinciding with the end of the vent tunnel. The vent tunnel had a relatively high density of refuse including a biface and denticulate, two cores, two choppers, and numerous pieces of large debitage. This concentration of large lithic artifacts appears to have been placed in the

Table 12.16. LA 6169, Structure 76, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
83	Adobe wall support	North wall	127 x 73 x 60 (h)	N/A	D-shaped addition to the exterior of the adobe north wall that partitions Features 76 and 47
110	Small pit	SW Quad	15 x 15 x 8	Yellowish brown (10YR 5/4) coarse-grained sand and no charcoal	Unburned basin-shaped pit; no associated artifacts
111	Small pit	SW Quad	15 x 15 x 8	Grayish brown (10YR 4/2) unconsolidated sandy soil with charcoal pices throughout	Unburned basin-shaped pit; two associated lithic artifacts
112	Unburned pit	NW Quad	28 x 21 x 6	Brown (10YR 5/3) sandy loam mixed with charcoal	Small basin-shaped pit with an irregular bottom; one basalt flake fragment
113	Hearth	Center of pit structure	76 x 69 (ext); 46 x 42 x 12 (int)	See text	Well-preserved heavily burned adobe lining
114	Small pit	SW Quad	13 x 12 x 10	Yellowish brown (10YR 5/4) coarse-grained sand and no charcoal	Unburned pit with steep sides and flat bottom; no associated artifacts
115	Divot	SW Quad	13 x 11 x 4	Yellowish brown (10YR 5/4) coarse-grained sand and no charcoal	Small, shallow pit
116	Unburned pit	NW Quad	65 x 34 x 5	Dark grayish brown (10YR 4/2) sandy loam with charcoal flecks and ash	Irregular shaped, shallow pit with ash and charcoal infused fill; may be an ash dump, although on wrong side of hearth; ash pits are more commonly between the hearth and the ventilator
118	Unburned pit	NW Quad	22 x 22 x 9	Light brown (10YR 6/4) compacted sandy clay	4 cm thick adobe cap; excavator suggests this was shallow posthole for Feature 47 capped by Feature 76 residents
123	Ventilator tunnel	East of hearth	110 x 50 x 30	Stratum V	Excavated depth is artificial; likely that tunnel and shaft were reinforced; no evidence of adobe or wood support structure, southeast orientation
174	Southeast posthole	SE Quad	35 x 34 x 50 (U); 20 x 17 x 24 (L)	Light brown (10YR 6/4) sandy loam with very sparse charcoal	Bilevel posthole; near Feature 166; may be evidence for remodeling or stabilization of the roof
180	Small pit	NE Quad	12 x 12 x 9	Yellowish brown (10YR 5/4) coarse-grained sand and no charcoal	Small, steep-sided basin-shaped pit

vent tunnel prior to or at abandonment.

Three human interments were associated with Structure 76. Feature 49, a 2.5-year-old infant, was interred in the upper north wall of Structure 76. The burial pit measured 51 cm long north to south by 45 cm wide east to west

by 30 cm deep. The burial was placed 35 to 40 cm below the top of the Structure 76 wall. Orientation could not be determined because the head was disarticulated from the lower skeleton. The child was associated with a Kwahe'e Black-on-white canteen and a partial

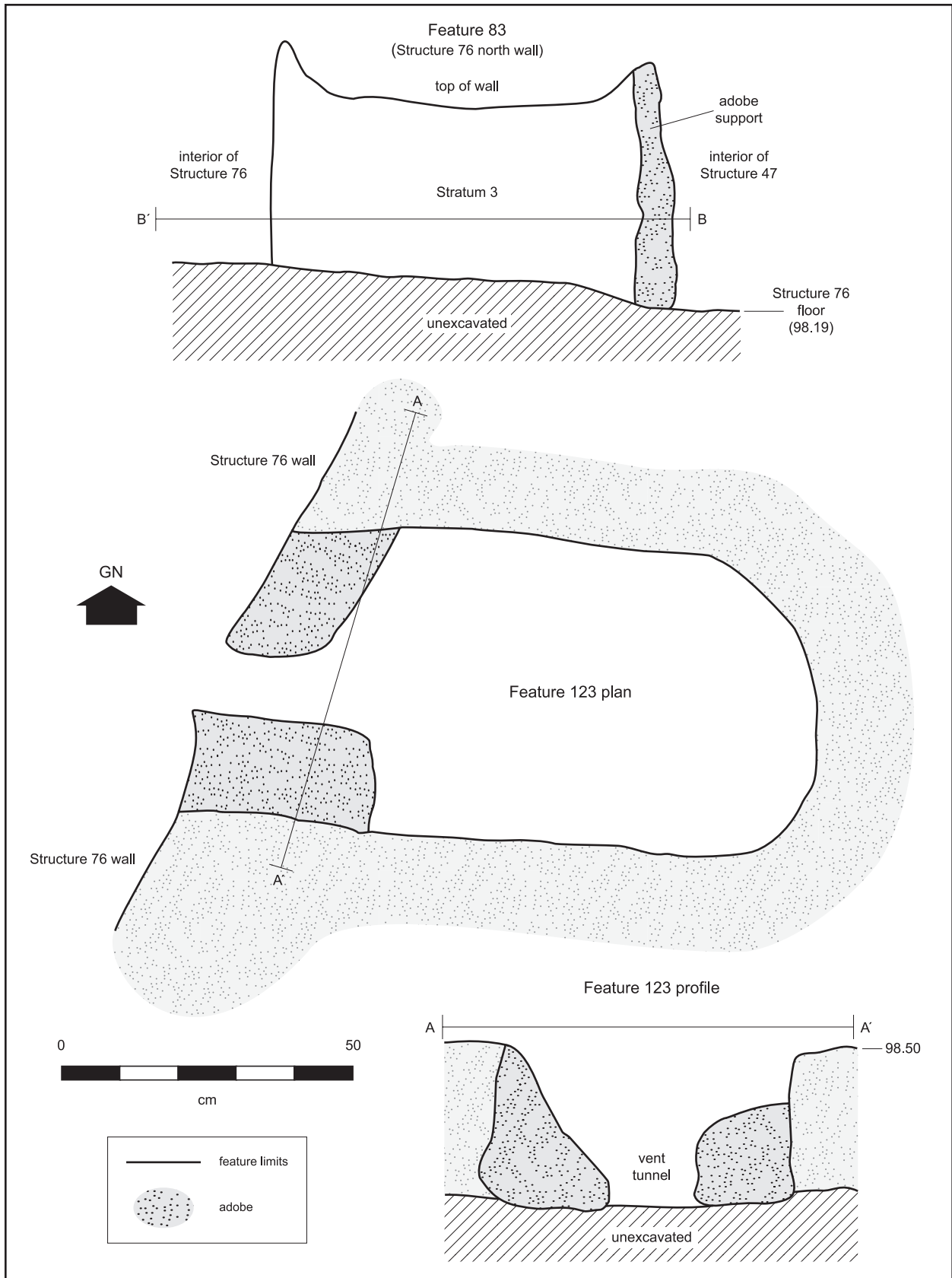


Figure 12.47. Variety of features: 171, 174, 180.



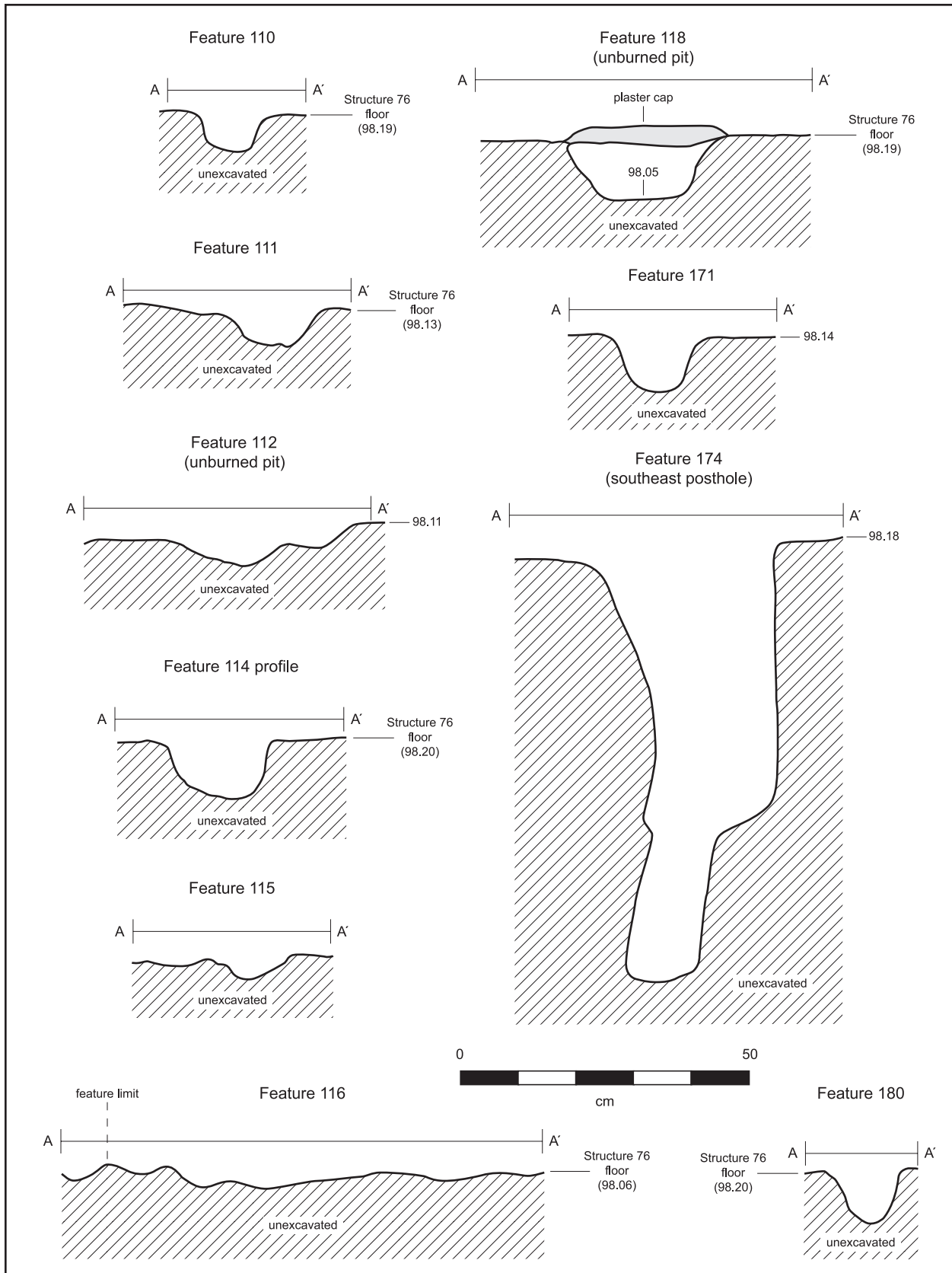


Figure 12.48. Variety of features: 83, 110, 111, 112, 114, 115, 116, 118, 123.

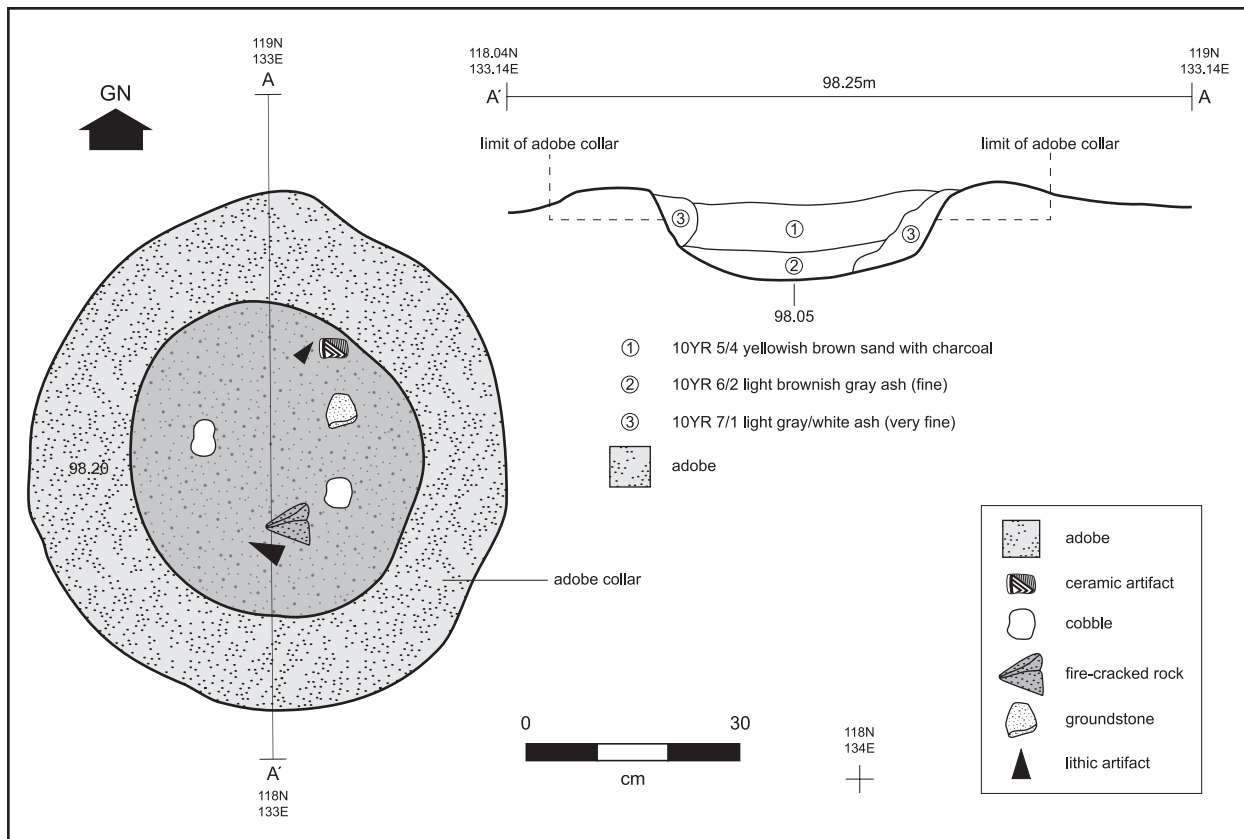


Figure 12.49. LA 6169, Structure 76, Feature 113, central hearth, plan and profile.

polished white jar. These vessels are shown in Chapter 16.

Feature 81 was in the west half of Structure 76 interred in roof fall and floor fill. The burial pit was oval-shaped and measured 90 cm north to south by 30 cm east to west and 30 cm deep. Orientation was north. The individual was in a semiflexed position lying on his back. This 18-19-year-old male had an associated partial Kwahe'e Black-on-white jar that was placed on his abdomen. There was a side-notched projectile point found in the pit during excavation. Laboratory examination found the projectile point tip embedded in a rib suggesting a probable cause of death.

Feature 82 was interred in the east half of Structure 76 in roof fall and floor fill. The burial pit was an estimated 60 cm north to south by 35 cm east to west and it was an estimated 25 cm deep. The 6-year-old child was tightly flexed, with its head oriented to the north. It was buried with a Kwahe'e Black-on-white bowl that was placed over the chest cavity fac-

ing down.

*Artifact Assemblage.* Abundant artifacts were recovered from the roof fall and floor fill, and floor contact deposits and features. Assemblages are described in the following section.

Pottery from the roof fall and floor fill totaled 916 sherds, which was one of the highest frequency assemblages examined from LA 6169. As a predominantly trash-deposited assemblage, it reflects type and vessel distributions left by occupants that succeeded the abandonment of Structure 76. The dominant Late Developmental-aged pottery suggests that these subsequent site residents were already living at LA 6169 when Structure 76 was abandoned. This is partly based on the tight temporal interval separating the Coalition and Late Developmental period occupations of LA 6169. Pottery reflects this tight interval and almost overlapping occupation from these two periods with the mixture of Kwahe'e and Santa Fe and Galisteo Black-on-white pottery and Middle and Northern Rio Grande utility



Figure 12.50. Structure 76, Feature 113, central hearth, and Feature 123.

wares. The utility pottery has temper that suggests a northern nonlocal manufacture source and local manufacture. This pattern does not continue into the Coalition period, when utility pottery is local and may have been obtained from the Pajarito Plateau sources.

Vessel forms are more diverse than from the Early Developmental period. Bowls, jars, canteens, and seed jars are represented. Jars predominate with the majority occurring as utility pottery; 36 sherds exhibit interior cooking wear. Bowls and jars occur in almost equal frequencies, which is typical for Rio Grande pottery assemblage vessel distributions for the Late Developmental period.

Eight hundred eighty-seven lithic artifacts were recovered from the roof and floor fill in Feature 76 (Table 12.14). Most artifacts were manufactured from chalcedony (45 percent) and nonvesicular igneous materials (42 percent). Low frequencies of Jemez obsidian ( $n = 36$ ), quartzite ( $n = 36$ ), chert ( $n = 28$ ), and vesicular igneous materials ( $n = 7$ ) were also represented. Three material categories; "other"

igneous, "other" local, and sandstone are represented by a single artifact each. It is unlikely that this assemblage is associated with the floor and roof fall strata. Its sheer size would suggest that these are trash deposits.

There are few primary flakes in this assemblage ( $n = 18$ ) and the chipped stone clearly represents an emphasis on later stages of secondary core reduction. Eighty-nine percent of all whole flakes lack dorsal cortex and 74 percent exhibit single-faceted platforms. Eleven flakes exhibit retouched platforms representing bifacial tool manufacture—eight were manufactured from chalcedony and three from Jemez obsidian. The assemblage contained 13 multiplatform cores manufactured from nonvesicular igneous materials ( $n = 6$ ), chalcedony ( $n = 5$ ), and chert ( $n = 2$ ). A single-platform core manufactured from nonvesicular igneous material was also recovered. Other manufacturing tools were a quartzite hammerstone and three quartzite pecking stones. Pecking stones are often associated with refurbishing grinding surfaces or shaping stone.

Unutilized flakes (71 percent) and utilized small angular debris (19 percent) compose the majority of the assemblage. This floor and roof fall strata contained 22 utilized flakes and 3 marginally retouched artifacts. The formal tools consist of five bifaces and two unifaces. Eleven utilized flakes were manufactured from nonvesicular igneous materials and the majority of these ( $n = 10$ ) exhibit unidirectional use consistent with wear patterns resulting from scraping on hard media like bone or wood. One flake tool had bidirectional rounding and striations typical of prolonged cutting or sawing on bone or wood. Ten obsidian flake tools were also recovered. Again the majority of these tools were used for scraping on hard media like bone or wood ( $n = 9$  edges). Bidirectional rounding and striations were identified on two use edges indicating prolonged cutting or sawing on bone or wood. Three marginally retouched flakes, manufactured from chalcedony, obsidian, and non-vesicular igneous material, lack evidence of utilization when examined with 60x magnification, but exhibit complete, uniform functional edges. It is likely that these tools may have been used for an activity that does not result in identifiable wear patterns at this low magnification.

Formal tools included four biface fragments and a complete biface, all manufactured from Jemez obsidian, and two complete unifaces manufactured from nonvesicular igneous material. Only a single biface fragment exhibited wear patterns typical of scraping on hard media like bone or wood. The other biface fragments and the complete biface lack evidence of use. The two unifacial tools also lack evidence of utilization.

Twenty-six ground stone artifacts were recovered from the roof fall and floor in the structure. Only four complete artifacts were identified. They are two expedient handstones which were manufactured from quartzite and rhyolite, a quartzite grinding slab, and a quartzite cobble with a pigment residue on the grinding surface. The remaining artifacts were fragments that represent a minimum of four

indeterminate manos manufactured from quartzitic sandstone, vesicular basalt, vesicular rhyolite, and sandstone, and three indeterminate metates manufactured from vesicular basalt, welded tuff, and fine-grained rhyolite. Another indeterminate grinding implement is indicated by a ground piece of andesite. The fragmentary nature of this assemblage suggests that these artifacts represent trash deposits not primary assemblages associated with floor or roof fall strata.

Faunal remains from the roof fall and floor fill were fairly abundant. Expected of the trash deposit was the relatively high frequency of medium artiodactyl (similar to pronghorn). Cottontail and jackrabbit are common, but do not dominate the assemblages as is found in earlier and later contexts. Processing evidence and burning indicates consumption and some tool production. Painted turtle was recovered from this context and floor suggesting ornament production. Painted turtle was also recovered from Structure 47. The Structure 47 specimens may actually be from the Late Developmental deposits.

Floor contact and floor features also yielded abundant artifact counts. This is probably a continuation of trash deposition from upper levels. It is unlikely that the majority of the refuse remains from primary use. Dense clusters of cobbles were intermixed with 305 ceramics, 360 chipped and ground stone artifacts, and a low frequency of faunal remains ( $n = 121$ ). The floor was covered by cobbles that were incorporated into roof construction. These cobbles along with early refuse deposits covered the floor prior to the heavy dumping episodes that accompanied the structure demolition and filling.

Pottery types recovered from the floor included utility and decorated types from local and nonlocal manufacture areas (see Table 12.13). Utility wares were represented by Northern Rio Grande and Middle Rio Grande utility wares, both indented corrugated and plain varieties (75 percent). Interestingly, the Northern Rio Grande utility wares include roughly equal amounts of plain and indented. The Middle Rio Grande util-

ity wares are predominantly plain body. Middle Rio Grande plain occurs most commonly with Early Developmental period components. These sherds could be intrusive into the deposit; introduced into the Late Developmental period context at the time of structure abandonment and collapse. They also may represent difference in manufacture trajectories for utility wares from Middle or Northern Rio Grande sources. None of the utility wares are sooted and only a few exhibit interior wear consistent with cooking use.

The decorated pottery is a mix of local and nonlocal types. The most common local type is Kwahe'e Black-on-white, which occurs primarily as bowl sherds. The most common nonlocal type is Socorro Black-on-white with a few sherds of Escavada-style mineral paint pottery. The majority of the sherds are from bowls. Kwahe'e and Socorro Black-on-white are expected to co-occur during the Late Developmental period, especially after AD 1050 or 1100.

The floor assemblage is very similar in type distribution to the floor fill and roof fall and structure collapse and trash fill levels. Upper fill within Structure 76 was trash filled with a mix of Coalition and Late Developmental refuse. The lower levels were predominantly Late Developmental. The close similarity between the upper fill and floor and floor fill sub-assemblages suggests that the floor and floor fill are mainly associated with post-occupation trash deposition. Occurrence of refuse on the floor indicates that trash filling began shortly after abandonment. Therefore, it is likely that many of the floor and floor fill sherds reflect activities conducted by site occupants, but not necessarily Structure 76 occupants. Therefore, the pottery and other artifacts are not necessarily good indicators of the range of domestic activities that occurred within Structure 76. In terms of dating, it is clear that Structure 76 was occupied during the Late Developmental with refuse filling occurring almost immediately following abandonment.

Three hundred and sixty lithic artifacts were recovered from the floor in Feature 76. The assemblage primarily consisted of chalcedony (49 percent), and nonvesicular igneous materials

(36 percent). Lower frequencies of Jemez obsidian ( $n = 27$ ), chert ( $n = 14$ ), and quartzite ( $n = 9$ ) were also recovered. The "other" igneous, "other" local, and nonlocal material categories were each represented by a single artifact. The single nonlocal artifact was manufactured from black opaque obsidian microscopically similar to obsidian from the Grants area.

The floor assemblage indicates that all stages of core reduction and both formal and expedient tool manufacture are represented. When individual material categories are examined, however, different reduction and tool manufacture trajectories are indicated. Chalcedony, Jemez obsidian, and nonvesicular igneous material categories provide evidence that primary decortication, secondary core reduction, and both formal and expedient tool manufacture occurred in the structure. The chert assemblage represents secondary core reduction but lacks evidence of either primary decortication or formal tool manufacture. Eight multiplatform cores, seven of chalcedony and one of nonvesicular igneous material, were also recovered from the floor. A flake from a hammerstone further indicates that core reduction activities occurred in the structure.

Unutilized flakes (69 percent) and unutilized small angular debris (16 percent) make up the majority of the assemblage. Twenty-seven tools were recovered from the floor in Feature 76. There are twelve expedient flake tools, six marginally retouched artifacts, two projectile points, four bifaces, two unifaces, and a hide scraper. Utilized flakes were manufactured from chalcedony ( $n = 5$ ), Jemez obsidian ( $n = 4$ ), and nonvesicular igneous materials ( $n = 3$ ). With the exception of one flake tool all exhibit unidirectional wear typical of scraping on hard media like bone or wood. A single flake had bidirectional wear resulting from cutting or sawing on bone or wood. All but one tool were complete, indicating that they were utilized and discarded in the structure.

Six tools exhibit marginal retouch—one exhibits utilization reflecting scraping wear on hard media. Two tools lacked complete functional edges and may represent manufacturing

failures. The remaining three are whole tools with complete functional edges which lack evidence of utilization using 60x magnification. Because these tools exhibit complete functional edges, it is likely they were utilized and discarded.

A number of formal tools were recovered from the floor. A whole projectile point was manufactured from chalcedony and a distal projectile point fragment was manufactured from Jemez obsidian. The complete projectile point exhibited uniform blade edges appearing perfectly functional. It is unclear why the artifact entered the archaeological record. Four biface fragments were manufactured from Jemez obsidian (n = 2), black opaque obsidian similar to obsidian originating in the Grants area (n = 1), and chalcedony (n = 1). One fragment exhibited unidirectional wear resulting from scraping on a hard media-like bone or wood. It is likely this tool was broken during use and discarded. The remaining bifaces lack complete functional edges. Two complete unifacial artifacts were made of chalcedony and chert. One lacked a functional edge and may have been discarded prior to completion while the other exhibited a complete functional edge possibly used in an activity that does not produce identifiable wear patterns and which can be identified using 60x magnification. A complete scraper, manufactured from "other" igneous material, exhibited wear patterns similar to those that have been experimentally produced during hide tanning (Schutt 1980:66–82). This lithic tool was used as a squeegee during the graining process to eliminate moisture from the hide, which results in a high polish with rounded shoulders on the functional edge.

Ground stone implements are a fine-grained rhyolite handstone, fragments of a quartzitic sandstone indeterminate grinding implement, and fragments of a ground axe.

A total of 133 animal bones were recovered from floor contexts (see Table 12.15). The fauna from floor contexts are similar to the roof fall and floor fill and structure collapse and trash fill contexts. These assemblages tend to have a

majority of rabbits and small mammals, but they also have a strong representation of medium artiodactyl and large mammal. The majority of these are unburned, indicating discard into midden context immediately following consumption. Some of the medium artiodactyl and large mammal bone may remain from stockpiles kept as tool raw material.

*Subsistence Activities.* Evidence of subsistence or domestic activities that occurred within Structure 76 or that were part of the occupants' daily routine is sparse or inconclusive. Floor features yielded no information that could be directly linked to occupants' subsistence pursuits. The majority of the chipped, ceramic, and ground stone artifacts could not be confidently distinguished from post-abandonment deposits. Artifact clusters on the floor could not be related to a specific suite of activities. The lack of substantial floor features and the absence of intramural space divisions suggests that Structure 76 was a seasonally occupied house that was not used intensively by its occupants.

Archaeobotanical analysis identified an interesting range of charred wild plant species from the floor and central hearth (Feature 113) (see Chapters 23 and 24). These materials may reflect seasonal occupation and some reliance on local plants in combination with *Zea mays*. Plant remains found in Structure 76 are more evenly distributed and include winged pigweed, amaranth, goosefoot, and purslane. Unusual are the occurrence of hedgehog cactus and winged pigweed seeds found in two separate floor samples (Tables 12.17–12.20). These are the sole examples of these species from LA 6169. Grass stems and juniper twigs found on the floor could be roof closing materials or debris from firewood or tinder. Overall, The floral assemblage from the site indicates an economy based on corn agriculture and a focus on weedy annual species and perennials that would have been harvested in the late summer and fall.

Faunal analysis revealed a mixed small and large mammal assemblage that is consistent with a domestic occupation. Slightly high-

er antelope counts may indicate more of a focus on the grassland or basin habitat. Overall, the assemblage was typical of a subsistence strategy that exploited nearby field species and with a limited focus on longer distance forays into grassland, foothill, and montane settings.

*Abandonment.* Structure 76 was abandoned in a manner that suggested no intended reuse of the structure by site occupants. The floor was cleaned of functioning artifacts and then almost immediately layered with roof fall and refuse. The wood elements of the superstructure were apparently removed and remnant roofing and closing material piled on the floor. The structure was then partly filled with a dense concentration of Late Developmental period trash mixed with adobe clods and clumps that remained from the retaining walls, built along the north and west perimeter. Filling of Structure 76 with Late Developmental period refuse indicates that Late Developmental people continued to use the site, but no evidence of their structures was revealed by excavation. The end of the Late Developmental occupation was followed by more gradual and perhaps natural filling with Coalition period artifacts mixed with eolian sand. Similar to Structure 4, Structure 76 was used as a cemetery soon after it was abandoned. The dense refuse-infused soil that covered the intramural burials suggests that the structure was abandoned and mostly trash filled before the interments occurred. The occurrence of Kwahe'e Black-on-white pottery with the 5- to 7-year-old child indicates interment in the late 1100s or early 1200s. Furthermore, the projectile point embedded in the rib of the 19-year-old male suggests that stressful conditions or some level of strife occurred soon after the structure was demolished.

*Summary.* Structure 76 was a deep, oval-outlined, straight-walled pit structure excavated into and incorporating the north and west walls of Structure 47. The floor area was 12.6 sq m. The structure had ten intramural features including a central hearth. The structure floor space was small when compared with the Early Developmental period structures from the project, but generous compared to the Coalition period pit rooms. The other small, deep, Early Developmental period pit structure from LA

6170 also showed limited intramural features, perhaps suggesting a more seasonal or part-time occupation. The low frequency of intramural features is typical of Late Developmental period pit structures from the Cochiti area and may be more evidence of seasonal occupation (Lange 1963a). Seasonal occupation is suggested by the small-size, lack of intramural features, and no apparent long-term storage. Abandonment of Structure 76 was final and filling of the pit was rapid. Apparently, the site was not abandoned, since the lower fill and inner, upper wall were used as a cemetery with the interment of three individuals buried with Late Developmental period pottery.

#### *Coalition Period Components*

The Coalition period component was comprised of four pit rooms (Features 10 [Study Unit 12], 15 [Study Unit 1], 16 [Study Unit 12], and 70 [Study Unit 10]), and the partial footings of an adobe surface room (Structure 12). Santa Fe Black-on-white pottery was recovered from the surface in Areas 1 and 2, but structural remains were only encountered in Area 1. The structures will be described in the order that they were discovered during the excavation.

**Structure 10.** Structure 10 pit room was located in the southwest portion of the site within Study Unit 12 (see Fig. 12.2). It had a rectangular plan that measured 2.58 north-south by 2.0 m east-west by 0.30 m deep. This small pit room had a central hearth and two small pits in the southeast corner. Low artifact densities throughout the structure fill suggest it filled naturally. There was only one extramural feature (Feature 20) to the west of Structure 10. A series of postholes and patches of diffusely stained soil were exposed to the southeast of Structure 10, but no temporal or functional relationship could be established between the two feature areas.

The floor and floor fill ceramic assemblage is dominated by Santa Fe Black-on-white and corrugated gray utility pottery. These pottery types are diagnostic of the Coalition period. None of

Table 12.17. LA 6169 Structure 76 Floor Features, Seeds and Fruits (frequency per liter)

Feature	76	76	76	113
FS#	1440	1476	1651	1677
<b>Cultural</b>				
<b>Annuals</b>				
<i>Amaranthus</i>	-	-	2.9	-
<i>Chenopodium</i>	2.5	2	-	2.5
Cheno-am	-	-	-	2.5
<i>Cycloloma</i>	-	-	2.9	.
<i>Portulaca</i>	-	-	-	0.8
<b>Perennials</b>				
<i>Echinocereus</i>	-	0.8	-	-
<b>Cultivars</b>				
<i>Zea mays</i>	-	0.4	-	-
<b>Non-cultural</b>				
<b>Annuals</b>				
<i>Chenopodium</i>	1	3.6	2.9	14.2
<i>Euphorbia</i>	-	6	-	-
<i>Portulaca</i>	-	-	-	0.8
Grasses				
<i>Sporobolus</i>	-	-	8.6	-

Table 12.18. LA 6169 Structure 76 Floor Features, Other Plant Parts, Abundance

Feature		76	76	76	113
	Plant part	1440	1476	1651	1677
<b>Cultural</b>					
<b>Perennials</b>					
<i>Juniperus</i>	Leaflet	-	-	-	1
	Twig	1	-	-	-
Unknown taxon	Stem	-	-	-	1
<b>Grasses</b>					
Gramineae	Stem	1	2	-	-
<b>Cultivars</b>					
<i>Zea mays</i>	Cupule	11	3	3	2
	Glume	1	-	-	-
<b>Non-cultural</b>					
Grasses					
Gramineae	Floret	-	1	-	-

Table 12.19. LA 6169 Structure 76 Floor Features, Wood from Flotation Samples by Weight

Feature	76	76	76	113
FS#	1440	1476	1651	1677
<b>Cultural</b>				
<b>Perennials</b>				
<i>Juniperus</i>	0.9	0.7	0.01	0.4
<i>Lycium</i>	0.04	-	-	-
<i>Pinus edulis</i>	-	0.3	-	-
<i>Salicaceae (Populus/Salix)</i>	0.3	0.2	0.3	-
<i>Sarco/Atriplex</i>	0.04	0.2	0.04	-
Non-coniferous wood	-	0.04	-	-



Table 12.20. LA 6169 Structure 76 Floor Features, Macrobotanical and C-14 Samples, Count and Weight

	Plant Part	Feature 76
<i>Juniperus</i>	Wood	31/4.85g
<i>Pinus edulis</i>	Wood	6/63g
Salicaceae ( <i>Populus/Salix</i> )	Wood	12/2.18g
<i>Sarco/Atriplex</i>	Wood	1/4.49g
<i>Juniperus</i>	Wood	5/4.10g
<i>Zea mays</i>	Cob	1/4.40g

the artifacts found on the floor were inferred to remain from the structure occupation.

*Excavation Strategy.* Structure 10 was first exposed in the west wall of Backhoe Trench 4 in Study Unit 12. A 6 to 8-m-diameter depression or low spot was observed in association with moderate to light densities of sherd and lithic artifacts in the general area. However, the size of the depression did not closely match the post-excavation dimensions of Structure 10 and it is likely that they were unrelated. No other cultural features were found within the depression limits.

The area surrounding Structure 10, including its overburden, from Grids 68 to 75N and 84 to 88E, was excavated in one or two 10-cm levels to the top of the prehistoric occupation surface evident as a break between Stratum 1 and Stratum 2. The structure limits were not exposed by this surface clearing. Grids within the structure, 72–74N/86–87E were excavated in 10-cm levels to within 10 cm of the floor. A structure stratigraphic profile was recorded along the 73N grid line. Excavation followed standard project procedures.

Floor clearing exposed the central hearth, six small pit outlines, as well as two floor imprints: serpent-shaped and moccasin-shaped. Considerable rodent burrowing in the structure called into question the authenticity of the imprints, since partly excavated rodent burrows tend to follow undulating patterns. Three of the small pits were never excavated because they were destroyed by a torrential rain that flooded the pit structure floor. Final structure documentation followed standard project procedure. Surface stripping and Level 1 excavation outside the structure only yielded one pit feature (Feature 20). Artifacts were recovered, but there was no other evidence of extramural activity.

*Stratigraphy.* Three stratigraphic layers were evident in Structure 10 (Fig. 12.51). Stratum 1 was the same 10 to 15-cm-thick layer that covered the site area, basically a modern eolian sand. Stratum 2 is a 10YR 5/4 brown silty loam with abundant mixed gravel. Artifact frequency ranges between 10 and 20 for each 10-cm level. This layer was 25- to 40-cm thick. Stratum 3 was similar soil to Stratum 2, but the stratum content included chunks of burned adobe from the disarticulated hearth collar (Feature 17) and unburned adobe from wall and roof fall. This layer was 15-cm thick. The adobe is not abundant but occurs consistently throughout the level. The south structure wall was excavated into poorly consolidated alluvial sand and gravel requiring a thick plaster or adobe to stabilize the wall. Some of this adobe preserved on the wall and was found in Stratum 3. Ceramics recovered from Stratum 3 tend to be larger than were recovered from upper levels and many were lying flat on or just above the floor indicating that they were left at or deposited immediately following abandonment. Stratigraphy suggests natural filling following abandonment.

Ceramics recovered from upper fill reflect a Coalition period low intensity trash deposit or natural-filling of the structure with Coalition period sheet trash accumulated during or after the structure was abandoned and dismantled (see Table 12.21). Santa Fe Black-on-white is the predominant white ware. Middle Rio Grande gray wares, plain and indented corrugated are the major utility wares. The only evidence of mixing from earlier contexts are the San Marcial Black-on-white and Tallahogan-like pottery from the Early Developmental period. Low frequencies of these early types occur throughout Coalition period contexts. It is possible that these sherds were mixed with wall or roofing material and entered the structure after its collapse.

Chipped stone and fauna also display low frequencies in the structure fill (Tables 12.22 and 12.23). These low frequencies combined with low variability in artifact types and mammal species strongly suggest natural filling of Structure 10. The low artifact frequencies indi-

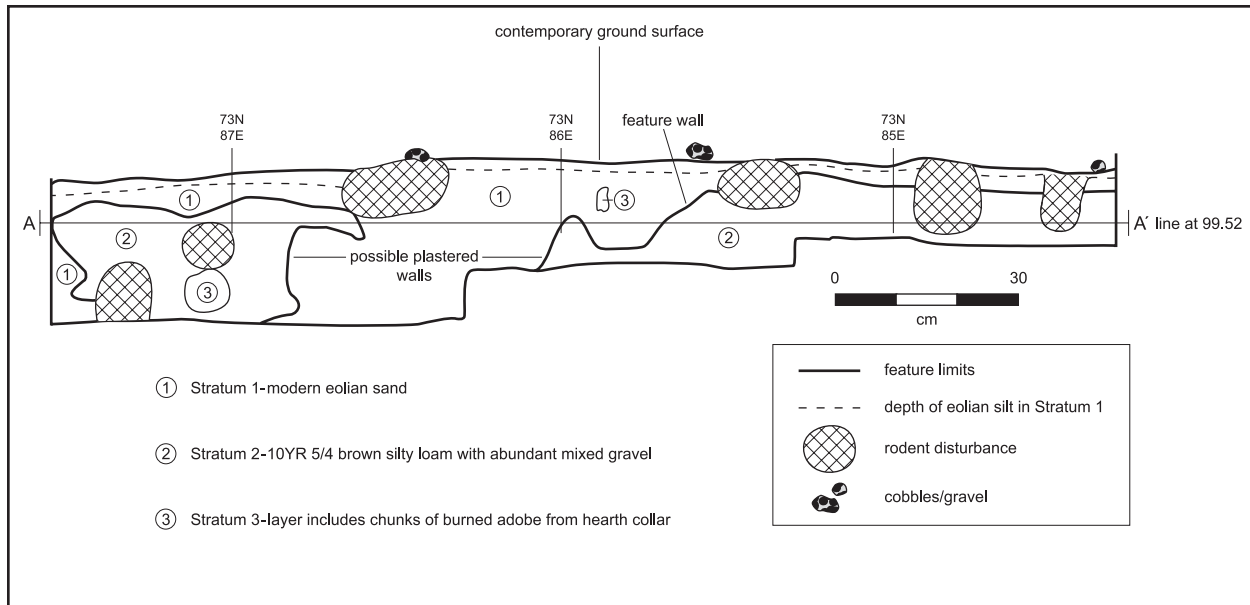


Figure 12.51. Structure 10, profile of the 73N line from 84.50 to 87.50 East.

cate that this portion of the site was largely unused following the abandonment of Structure 10, except for sheet trash disposal. Sheet trash disposal rather than midden formation are indicated by the relatively low frequencies of artifacts recovered from the surface stripping to the east and north of Structure 10.

*Description.* Feature 10 was a rectangular pit room that measured 2.58 m north-south by 2.0 m east-west by 0.30 m deep (Figs. 12.52, 12.53). Only part of Structure 10 was excavated because the east wall was removed by Backhoe Trench 4. Since there was no evidence of the pit room in the east wall of Backhoe Trench 4, it was assumed that the east structure limit was within the backhoe trench limit. Based on actual and extrapolated dimensions, the estimated floor area was 5.15 sq m.

This small pit room had a central hearth and two small pits in the southeast corner. The interior hearth was east-centrally positioned with seven small, shallow postholes supporting a superstructure that may have been insubstantial. Stratigraphy indicates that it was filled by a combination of natural processes and wall and roof collapse after abandonment. Tumbled clumps or clods of adobe indicate there may have been a thin-walled superstructure. Artifacts recovered from on or near the floor

appear to be de facto refuse. Few artifacts are associated directly with activities that occurred in the structure.

*Construction.* Excavation of Feature 10 yielded limited evidence of house construction. Floors and walls used native soil. Possible postholes on the southeast corner and along the north wall suggest a light-weight superstructure.

Structure 10 lower walls were excavated into the native soil. The north and west walls incorporated Stratum 2 as it has been defined for Area 1. This consolidated soil made up the bulk of structure walls on this site regardless of time period. The south wall was excavated into the gravelly Stratum 3: a filled channel that cut across Area 1 long before the site was occupied (see McFadden, Chapter 6). Stratum 3 is not consolidated and it appeared that the south wall had been plastered or adobe-packed to create a stable wall surface. The walls meet the floor at a 90 degree angle. Upper walls may have been jacal-style construction. This is based on the small diameter holes along the north wall and the scattered adobe that was recovered from the lower 30 cm of the structure fill.

The structure floor was packed and smoothed Stratum 2. There was no evidence of formal preparation or plastering. The floor was in good condition, except for the rodent bur-

Table 12.21. LA 6169, Coalition Component Ceramic Distributions, Structures 10, 11, 15, 16, and 70

	Structure 10, Floor Fill and Floor	Structure 10 Upper Fill	Structure 15 Floor Fill, Floor	Structure 15, Upper Fill	Structure 16, Upper Fill	Structure 16, Floor Fill and Floor	Structure 70 Upper Fill	Structure 70 Floor Fill and Floor	Possible Surface Rooms and Extramural Area	Study Unit 10, Extramural Area and Sheet Trash	Total
Indeterminate mineral paint undifferentiated	-	-	-	-	1	-	-	-	-	-	1
Unpainted undifferentiated	3	10	3	10	11	4	32	9	12	3	97
	7.9%	8.3%	3.1%	4.9%	9.0%	3.1%	5.2%	10.8%	5.8%	10.3%	5.9%
NRG mineral paint (undifferentiated)	-	-	-	-	-	-	-	-	1	-	1
Kwahe'e B/w (solid designs)	-	-	-	1	-	-	-	-	0.5%	-	1
	-	-	-	0.5%	-	-	-	-	-	-	0.1%
Kwahe'e B/w (thin parallel line)	-	-	-	-	1	-	-	-	-	-	1
	-	-	-	-	0.8%	-	-	-	-	-	0.1%
Kwahe'e B/w (thick parallel lines)	-	-	-	-	-	1	-	-	-	-	1
	-	-	-	-	-	0.8%	-	-	-	-	0.1%
Kwahe'e B/w (hatched)	-	-	-	-	1	-	-	-	-	-	1
	-	-	-	-	0.8%	-	-	-	-	-	0.1%
Santa Fe B/w	3	11	42	30	15	20	128	23	12	1	285
	7.9%	9.2%	42.9%	14.6%	12.3%	15.4%	20.7%	27.7%	5.8%	3.4%	17.3%
Galisteo B/w	-	-	1	7	3	2	3	-	1	-	17
	-	-	1.0%	3.4%	2.5%	1.5%	0.5%	-	0.5%	-	1.0%
NRG Plain rim	-	-	-	-	-	-	2	-	-	-	2
	-	-	-	-	-	-	0.3%	-	-	-	0.1%
NRG Plain body	-	1	1	-	-	-	19	1	7	-	29
	-	0.8%	1.0%	-	-	-	3.1%	1.2%	3.4%	-	1.8%
NRG Indented Corrugated	-	-	-	-	-	-	-	-	1	-	1
	-	-	-	-	-	-	-	-	0.5%	-	0.1%
NRG Plain Corrugated	-	-	-	1	-	-	8	4	2	3	18
	-	-	-	0.5%	-	-	1.3%	4.8%	1.0%	10.3%	1.1%
NRG Smear Plain Corrugated	3	-	-	-	-	-	16	1	-	-	20
	7.9%	-	-	-	-	-	2.6%	1.2%	-	-	1.2%
NRG Smear Plain Indented Corrugated	-	-	-	-	-	-	-	-	2	-	2
	-	-	-	-	-	-	-	-	1.0%	-	0.1%
NRG Mudware	-	-	1	-	-	20	4	-	-	-	25
	-	-	1.0%	-	-	15.4%	0.6%	-	-	-	1.5%
MRG Plain rim	-	2	1	1	-	1	2	-	2	-	9
	-	1.7%	1.0%	0.5%	-	0.8%	0.3%	-	1.0%	-	0.5%
MRG Unknown rim	-	-	-	-	-	2	-	-	-	-	2
	-	-	-	-	-	1.5%	-	-	-	-	0.1%
MRG Plain body	11	37	15	37	29	22	82	7	72	17	329
	28.9%	30.8%	15.3%	18.0%	23.8%	16.9%	13.3%	8.4%	35.0%	58.6%	19.9%
Wide Neckbanded (wiped)	-	1	-	-	-	-	-	-	-	-	1
	-	0.8%	-	-	-	-	-	-	-	-	0.1%
MRG Indented Corrugated	-	-	-	-	7	17	5	2	9	-	40
	-	-	-	-	5.7%	13.1%	0.8%	2.4%	4.4%	-	2.4%
MRG Plain Corrugated	6	29	2	24	1	2	10	4	45	2	125
	15.8%	24.2%	2.0%	11.7%	0.8%	1.5%	1.6%	4.8%	21.8%	6.9%	7.6%
MRG Smear Plain Corrugated	12	25	32	89	39	30	292	22	21	2	564
	31.6%	20.8%	32.7%	43.2%	32.0%	23.1%	47.2%	26.5%	10.2%	6.9%	34.2%
MRG Smear Indented Corrugated	-	-	-	3	11	5	-	6	6	-	31
	-	-	-	1.5%	9.0%	3.8%	-	7.2%	2.9%	-	1.9%
MRG Polished gray	-	-	-	-	-	-	1	-	9	-	10
	-	-	-	-	-	-	0.2%	-	4.4%	-	0.6%
MRG Low relief corrugated	-	-	-	-	-	1	-	1	-	-	2
	-	-	-	-	-	0.80%	-	1.20%	-	-	0.10%
MRG Unpainted undifferent.	1	-	-	-	2	8	1	-	-	-	12
	-	0.8%	-	-	-	1.5%	1.3%	1.2%	-	-	0.7%
MRG Mineral Paint (undifferentiated)	-	-	-	1	-	1	2	2	1	1	8
	-	-	-	0.5%	-	0.8%	0.3%	2.4%	0.5%	3.4%	0.5%
San Marcial B/w	-	-	-	-	1	-	2	-	1	-	4
	-	-	-	-	0.8%	-	0.3%	-	0.5%	-	0.2%
MRG Slipped Red over white paste (Tallahogan-like)	-	3	-	1	2	-	2	-	-	-	8
	-	2.5%	-	0.5%	1.6%	-	0.3%	-	-	-	0.5%
MRG Slipped over red paste	-	-	-	1	-	-	-	-	2	-	3
	-	-	-	0.5%	-	-	-	-	1.0%	-	0.2%
Total	38	120	98	206	122	130	618	83	206	29	1650
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 12.22 Structure 10, Upper Fill and Floor Fill and Floor Chipped and Ground Stone Artifact Type by Material Type

UPPER FILL	Material Group												Grouped Material Totals					
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		"Other" Local		"Other" Non-local		N	%
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Angular Debris	5	7.2	26	37.7	1	1.4	1	1.4	36	52.2	-	-	-	-	-	-	69	35
Flake	10	9.3	45	41.7	-	-	1	0.9	50	46.3	-	-	1	0.9	1	0.9	108	55
Flake, Sharpening	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Flake from	-	-	-	-	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Core, Multiplatform	-	-	1	25	-	-	-	-	3	75	-	-	-	-	-	-	4	2
Chopper, Unifacial	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	<1
Anvil	-	-	-	-	1	100	-	-	-	-	-	-	-	-	-	-	1	<1
Angular Debris, Utility	-	-	1	100	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Angular Deb, Marg	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	1	50	1	50	-	-	-	-	-	-	2	1
Flake, Marg Retouch	-	-	-	-	-	-	1	50	1	50	-	-	-	-	-	-	2	1
Projectile Point	-	-	-	-	-	-	1	100	-	-	-	-	-	-	-	-	1	<1
Uniface	-	-	1	50	-	-	-	-	1	50	-	-	-	-	-	-	2	1
Mano, Unknown	-	-	-	-	-	-	-	-	-	-	-	1	100	-	-	-	1	<1
Total	15	7.7	74	37.9	2	1	7	3.6	93	47.7	1	0.5	2	1	1	0.5	195	100

FLOOR FILL AND FLOOR	Material Group												Grouped Material Totals					
	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		"Other" Local		"Other" Non-local		N	%		
	N	%	N	%	N	%	N	%	N	%	N	%						
Angular Debris	1	8.3	5	41.7	1	8.3	5	41.7	12	30	-	-	-	-	-	-	30	15
Flake	5	20.8	8	33.3	-	-	11	45.8	24	60	-	-	-	-	-	-	59	23
Tested Rock	-	-	-	-	-	-	1	100	1	2	-	-	-	-	-	-	2	1
Flake, Utilized	1	50	1	50	-	-	-	-	2	5	-	-	-	-	-	-	4	2
Biface	-	-	-	-	-	-	1	100	1	2	-	-	-	-	-	-	2	1
Total	7	17.5	14	35	1	2.5	18	45	40	100	-	-	-	-	-	-	100	100

Table 12.23. LA 6169, Structure 10 Fauna Summary

	Upper Fill		Floor Fill/Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-lrg bird	-	-	4	40.0%	4	33.3%
Medium-large mammal	-	-	2	20.0%	2	16.7%
Desert cottontail	-	-	1	10.0%	1	8.3%
Mule deer	1	50.0%	-	-	1	8.3%
Pronghorn	-	-	1	10.0%	1	8.3%
Large bird	1	50.0%	1	50.0%	2	16.7%
Turkey	-	-	1	10.0%	1	8.3%
Total	2	100.0%	10	100.0%	12	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Burned	0	0.0%	0	0.0%	0	0.0%
25-50% complete	-	-	2	20.0%	2	16.7%
<25% complete	2	100.0%	8	80.0%	10	83.3%

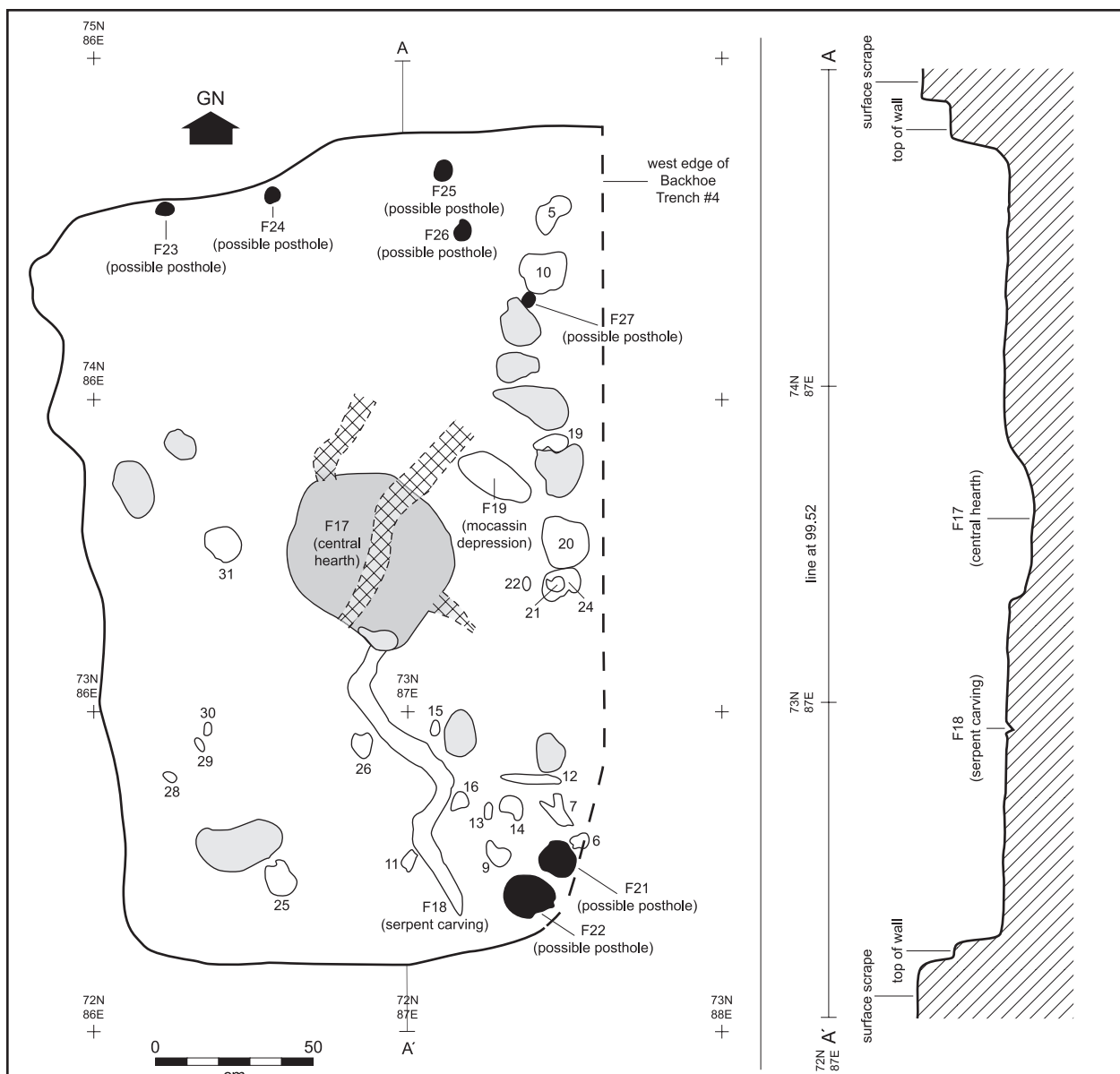


Figure 12.52. LA 6169, Structure 10, plan and profile.



Figure 12.53. Structure 10.

rows. The floor was only lightly charcoal stained with slight oxidation visible at the lip of the central hearth.

*Features.* Eight floor features, including a central hearth were exposed (Fig. 12.52). Two floor imprints resembled a serpent's body and a moccasin print. Basic feature information is provided in Table 12.24.

Feature 17, the central hearth, was roughly circular in outline with steep sides and a maximum depth of 9 cm. The fill was a redeposited charcoal-impregnated sandy loam, but no ash remained from hearth use. The sides were lightly oxidized as was the floor that skirted the lip of the feature. Clumps of consolidated clay loam encountered in the floor fill above the hearth may have been collar remnants displaced by the heavy rodent activity that plagued the structure fill and walls. Only chipped stone was recovered from the feature including two possible hammerstones (Fig. 12.54).

Features 21 and 22 were small, shallow, steep-wall pits that may have support poles within a jacal-style superstructure. Three other

pits, Features 23 to 25, had similar outlines and may have supported a superstructure and incorporated the north wall.

Feature 18 was the zig-zag outline of a serpent or snake body carved into the structure floor (see Figs. 12.52, 12.55). From the tale to the head it was oriented south-north roughly paralleling the course of the Rio Grande. The serpent extended into and possibly through the hearth. The interior was smoothed and floated, but there was no evidence of additional preparation. The color of the finished serpent imprint was slightly grayer and darker than the surrounding floor matrix. The crew members from Santo Domingo Pueblo suggested that the serpent's body symbolized the river. Serpents or snakes are commonly depicted as rock art near water sources on the Pajarito Plateau, Galisteo Basin, and along the Santa Fe River (Schaafsma 1992).

Feature 19 was recorded as a right foot moccasin imprint. It was located northeast of the central hearth. It also had slightly darker coloration than the surrounding matrix. This

Table 12.24. Structure 10 Intramural Feature Descriptions

Feature No.	Type	Dimensions (LWD in cm)	Fill	Comments
17	Central fire pit	58 x 54 x 12	Brown (10YR 5/4) silt loam mixed with charcoal and ash. Burned clay was mixed throughout the fill, a probably hearth collar remnant	Heavily rodent disturbed; snake representation in Feature 10 floor appears to pass through Feature 17
18	Serpent carved into floor	90 x 7 x 2		Best preserved segment enters the south limit of Feature 17; serpent may have exited through northwest limit and extended for 17 cm
19	Moccasin depression	22.5 x 10		In floor
20	Extramural pit	40 x 36 x 19		Beyond west wall
21	Possible posthole	11 x 10 x 6	Brown (10YR) fine sand with sparse gravel and charcoal; natural deposit following abandonment	
22	Possible posthole	15 x 12 x 6	Brown (10YR) fine sand with sparse gravel and charcoal; natural deposit following abandonment	
23	Possible posthole	unexcavated		
24	Possible posthole	unexcavated		
25	Possible posthole	unexcavated		
26	Possible posthole	unexcavated		
27	Possible posthole	unexcavated		

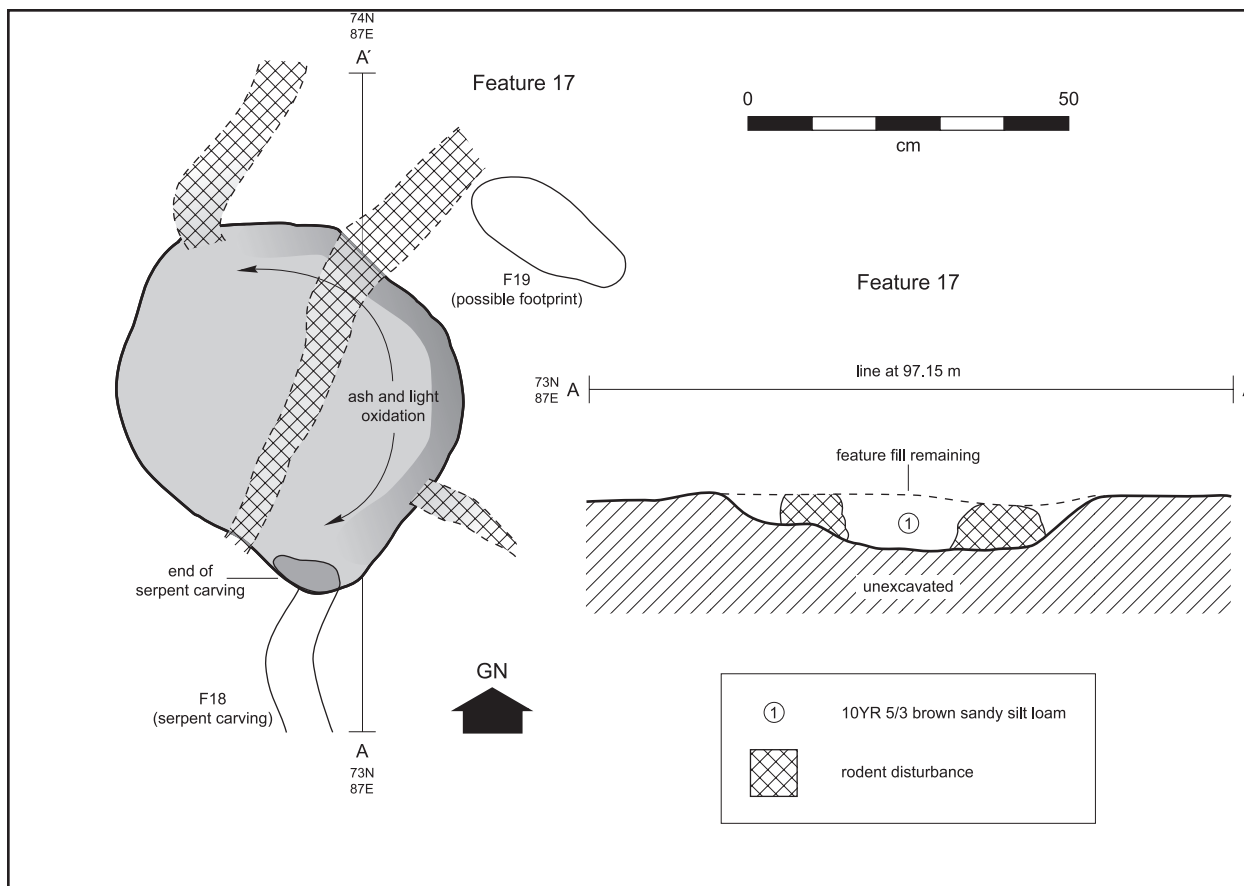


Figure 12.54. LA 6169, Structure 10, Feature 17, plan and profile.



Figure 12.55. LA 6169, Feature 18, possible serpent carved into Structure 10 floor.

imprint is less sculpted and more suspect as rodent disturbance than Feature 18.

*Artifact Assemblage.* Structure 10 artifact assemblages were separated into upper fill, floor fill, and floor contexts. The upper fill deposits were an accumulation of alluvial and eolian soil mixed with low frequencies of artifacts. Artifact frequencies did not increase dramatically with depth, but the artifacts may have a closer temporal association with the occupation of Structure 10.

One hundred and twenty-one sherds were recovered from the upper fill. These were primarily Middle Rio Grande Plain, corrugated utility pottery types, and Santa Fe Black-on-white. Santa Fe Black-on-white occurred almost exclusively as bowl sherds, while the utility wares were all jars. Utility pottery temper types included local and Pajarito Plateau sources. Utility jars were the dominant vessel form, and of these, only three exhibited any interior cooking wear, suggesting that a majority may have been storage vessels.

One hundred and ninety-five lithic arti-

facts were recovered from the upper fill in Feature 10. The majority of the artifacts were manufactured from nonvesicular igneous materials (48 percent) and chert (38 percent). Low frequencies of chalcedony ( $n = 15$ ), Jemez obsidian ( $n = 7$ ), quartzite ( $n = 2$ ), "other" local ( $n = 2$ ), vesicular igneous ( $n = 1$ ), and nonlocal dendritic jasper ( $n = 1$ ) were also recovered.

The lithic assemblage indicates an emphasis on later stages of secondary core reduction and formal tool manufacture. Eighty-one percent of the whole flakes lack dorsal cortex and the majority of the platforms are single faceted (57 percent) or collapsed (22 percent). Formal bifacial tool manufacture is indicated by retouched and prepared platforms within the obsidian ( $n = 3$ ), chert ( $n = 1$ ), and nonvesicular igneous material categories ( $n = 1$ ). Four multiplatform cores were manufactured from nonvesicular igneous materials ( $n = 3$ ) and chert ( $n = 1$ ). A nonvesicular igneous chopper and a quartzite anvil were also recovered.

Unutilized flakes (55 percent) and unutilized small angular debris (35 percent) make



up the majority of the assemblage. Two utilized flakes and a piece of utilized angular debris all exhibit unidirectional wear typical of scraping on hard media like bone or wood. They were manufactured from chert, Jemez obsidian, and nonvesicular igneous material. Two marginally retouched flakes and a piece of angular debris also exhibit unidirectional scraping wear. All exhibit unidirectional use wear and two do not exhibit complete functional edges indicating they were probably broken during use. They were manufactured from Jemez obsidian and nonvesicular igneous material. Formal tools included two unifacial tools and a biface. The unifacial tools were manufactured from chert and nonvesicular igneous material, while the biface was manufactured of Jemez obsidian. Both unifacial tools were complete—one exhibited rounding and striations typical of scraping on a soft medium like hide. The biface was broken and did not exhibit evidence of use.

Only two animal bones were recovered from the upper fill. One was from a mule deer and the other from a large bird (probably a turkey). The low animal bone frequency suggests natural filling of the upper fill of Structure 10.

Structure 10 contained a surprisingly high number of floor fill and floor contact debris and artifacts, considering its size and presumed seasonal occupation. Low frequency dispersed cobbles and adobe clumps were associated with 38 ceramics, 40 chipped stone artifacts, and a low frequency of faunal remains ( $n = 8$ ). Type or species distribution for artifact classes are provided in Tables 12.21–12.23. These, along with early refuse deposits, covered the floor prior to natural filling and structure deterioration and collapse.

Pottery types are typical for Coalition period components. Santa Fe Black-on-white was the predominant decorated pottery, although there were only three sherds recovered. Anthill sand Middle Rio Grande utility ware including plain body, plain corrugated, and smeared indented were identified. This low frequency assemblage shows almost no mixing, provid-

ing one example of a pure Coalition period deposit. Unfortunately, no independent dates were derived from samples recovered from Feature 10 that would refine the occupation dates for the structure.

Forty lithic artifacts were recovered from the floor and fill in Feature 10. Most artifacts were manufactured from nonvesicular igneous materials (45 percent) and chert (35 percent). Low frequencies of chalcedony ( $n = 7$ ) and Jemez obsidian ( $n = 1$ ) were also represented.

The lithic assemblage reflects secondary core reduction. Eighty-eight percent of the whole flakes lack dorsal cortex and 12 percent exhibit partial dorsal cortex. The majority of platforms is either single-faceted (72 percent) or collapsed (16 percent) indicating an emphasis on later stages of secondary core reduction. No primary decortication flakes or tertiary flakes with retouched or prepared platforms were recovered.

Unutilized flakes (60 percent) and unutilized small angular debris (30 percent) made up the majority of the assemblage. Two expedient utilized flakes, one of chalcedony and the other of chert, exhibit battering and unidirectional scraping wear. A biface made of nonvesicular igneous material exhibits one edge with unidirectional scraping wear and another with battering use. The scraping wear is similar to use patterns resulting from scraping on hard media like bone or wood. No ground stone was recovered.

The faunal assemblage was typical with small, medium, and large mammals represented. It is interesting that this small assemblage is microcosmic of the large assemblages recovered from other Coalition period contexts. This is an indicator of how strong the faunal pattern is relative to subsistence strategies.

Ethnobotanical sampling yielded charred corn cupules from the floor and central hearth (see Chapter 23, McBride and Toll) (Tables 12.25–12.28). Corn cupules are associated with cobs and may enter archaeological contexts as fuel or, perhaps, after corn is roasted and shelled. The fact that no other domestic or wild plant species were present suggests that corn

may have been an important part of the diet during a short occupation.

*Subsistence Activities.* There is limited direct or indirect evidence of subsistence activities that occurred within or were associated with Structure 10. This small structure is interpreted as a seasonal residence. The majority of the ceramic or lithic artifacts cannot be confidently associated with structure activities. A pollen sample from the structure floor yielded no economic pollen (see Chapter 24, R. Holloway). Ethnobotanical samples yielded charred *Zea mays* cupules from the hearth (Feature 17) suggesting corn cobs were introduced into an active fire (see Chapter 23, McBride and Toll) (Tables 12.25–12.28). A variety of wood was recovered from Feature 17 reflecting broad-based fuel wood gathering on the terraces and in the Rio Grande floodplain. Fauna from the structure floor and fill reflect field hunting and a limited reliance on large mammals. However, the animal bones are probably from refuse that entered the structure after it was abandoned,

and, therefore, represents the faunal exploitation pattern of subsequent site residents.

*Abandonment.* There was no direct evidence of structure abandonment behaviors. A lack of burning, remnant upright posts, and low frequency of adobe in the fill suggest a combination of dismantling and natural, gradual deterioration. The upper structure fill contained relatively equal and low frequencies of artifacts within each arbitrary level, suggesting they were rede-

Table 12.25. LA 6169 Structure 10 Floor Features, Seeds and Fruits (frequency by liter)

Feature	10	10	17
FS #	604	633	
<b>Cultural</b>			
<b>Annuals</b>			
<i>Chenopodium</i>	0.3	-	-
<i>Corispermum</i>	-	0.4	-
<i>Portulaca</i>	-	-	0.8
Seed # 9210	-	0.4	-
<b>Possibly Cultural</b>			
<b>Annuals</b>			
<i>Portulaca</i>	-	-	0.8
<b>Noncultural</b>			
<b>Annuals</b>			
<i>Chenopodium</i>	-	-	17.1
<i>Corispermum</i>	-	-	0.8
<i>Euphorbia</i>	0.5	-	-
<i>Kallstroemia</i>	-	-	5.7
Solanaceae	95.1	-	-
<b>Perennials</b>			
<i>Juniperus</i>	-	-	0.8
<b>Grasses</b>			
Gramineae	-	-	0.4

Table 12.26. LA 6169 Structure 10 Floor Features, Other Plant Parts, Abundance

Feature		10	17
FS#		633	
		Plant part	
<b>Cultural</b>			
<b>Cultivars</b>			
<i>Zea mays</i>	Cupule	1	10
	Cob	-	1
<b>Non-cultural</b>			
<b>Annuals</b>			
<i>Euphorbia</i>	Seed	-	208
Solanaceae	Seed	10	-

Table 12.27. LA 6169 Structure 10 Floor Features, Wood from Flotation Samples by Weight

	Feature 17
<i>Juniperus</i>	.30g
<i>Cylindropuntia</i>	.04g
<i>Pinus edulis</i>	.04g
Salicaceae ( <i>Populus/Salix</i> )	.04g
<i>Sarco/Atriplex</i>	.04g

Table 12.28. LA 6169 Structure 10 Floor Features, Macrobotanical and C-14 Samples, Count and Weight

	Plant Part	Feature 17
<i>Artemisia</i>	Wood	6/.16g
<i>Juniperus</i>	Wood	12/.43g
Salicaceae ( <i>Populus/Salix</i> )	Wood	9/.66g
<i>Sarco/Atriplex</i>	Wood	2/.04g
<b>Cultivars</b>		
<i>Zea mays</i>	Cupule	5/.06g

posited from the ambient site scatter accumulated from 400 years of periodic occupation.

*Summary.* Structure 10 was the smallest and least formal of the LA 6169 Coalition period pit structures. Its low native soil wall remnant and limited evidence of a superstructure suggest it was built as a temporary structure. Its estimated 5.15-sq-m floor space could have accommodated one or two occupants. Except for the intramural hearth, there were no other intramural domestic or subsistence-related features indicating that the bulk of the activities occurred outdoors. An associated activity area was not defined, although one could have been located west of the project corridor.

Small fieldhouses or structures were a common component of the Pueblo III-IV settlement pattern in the Northern Rio Grande. In the Cochiti area, pit rooms were excavated during both Cochiti Dam and Reservoir projects (Lange 1968a; Biella and Chapman 1979). Small pit rooms or structures have been excavated in the Santa Fe area near 200+ room pueblos (Hannaford 2000). These structures also had limited intramural features and extramural activity space. Pit rooms appear to substitute for above-ground field structures that were common throughout much of the northern Southwest during prehistoric and early historic times.

Lacking absolute chronometric dates for Structure 10, it is difficult to place it within the Coalition period sequence. With a use-span of less than 5 years likely, its construction may coincide with the initial Coalition period occupation of this terrace. Also it is somewhat isolated from the other pit structures and is architecturally less formal, supporting an observation that it was occupied during the early part of the sequence. However, the early to mid 1200s archaeomagnetic dates obtained from the other pit rooms and the AD 1205 date obtained from the Late Developmental Structure 76, leave little room for inserting Structure 10 into the early part of the occupation sequence. Since all the pit rooms date to the early Coalition period, it is clear that they and Structure 10 are part of a well-established

pattern of seasonal occupation of the terraces in support of agricultural activities.

**Structure 15.** Structure 15 was a deep, subrectangular Coalition period pit room located in Study Unit 1 of Area 1. Part of the structure cut into and through the southeast wall of the Early Developmental pit structure (Structure 4) and its ventilator tunnel. Structure 15 was first recognized as a layer of finely laminated silt and sand lenses in the south and southeast wall of Structure 4. Its superpositioning within Structure 4 explains the presence of the few organic paint ceramics that were recovered from its southeast quadrant.

Excavation revealed a single hearth in the floor and a ventilator tunnel and shaft in the east wall. The floor ceramic assemblage included partial Santa Fe Black-on-white bowls and corrugated utility ware. Scattered cobbles on the floor and in the lower fill may have been incorporated in roof and upper wall construction.

Adobe encountered in the structure fill suggest a walled superstructure. Abandonment was planned, but the floor was not completely cleaned of tools and containers. The size suggests that it was a seasonal structure suited to one or two people at a time.

*Excavation Strategy.* Structure 15 was first exposed in the southeast wall of Structure 4 as layers of laminated sand and silt. The exposed soil profile indicated that the structure had filled naturally and there were no instances of trash filling. One instance of reuse was identified as Feature 14, a thermal feature that was built into the upper fill of Structure 15, extending north into Structure 4. Lacking definable cultural strata, Structure 15 was excavated in grids and in 7 to 10 cm arbitrary units. Excavated grids included all or part of 83-85N/88-90E. All fill was screened. Documentation of intrusive features or rock concentrations followed standard project procedure.

Floor fill and floor were screened through 1/8 inch mesh. All artifacts were piece-plotted. Floor and wall feature were recorded according to project procedures.

*Stratigraphy.* Six stratigraphic layers were

Table 12.29. LA 6169, Feature 15 Stratigraphic Descriptions

Designation	Description	Munsell Color Range	Comments
I	Sandy loam; 10-20 cm thick	Brown; 7.5YR 5/4 (dry)	Similar to site's Stratum I; low artifact content and primarily an eolian deposit
II	Sandy clay loam and sand; 10-50 cm thick	Light brown to brown; 7.5YR 6-5/4 (dry)	Stratum has consolidated, blocky structure; appeared to be a massive water deposited silt; filled upper portion of Stratum IV-filled depression
III	Sandy loam with intermittent silty clay lenses; 30-45 cm thick	Brown; 7.5YR 5/4 (dry)	Fine eolian sand with intermittent and discontinuous silt lenses no more than 15 cm long; weak blocky structure, very sparse charcoal; initial natural fill within Feature 15 following abandonment
IV	Sandy loam with long fine silt lenses; 40 cm thick	Brown; 7.5YR 5/4 (dry)	Laminated layer extended across profile dipping to feature middle and rising back to west wall; weak blocky structure slightly plastic when moist; appeared that mixed eolian and alluvial layer washed in after the structure had been abandoned, partly filled, the fill removed as borrow material, and then filled naturally. This layer is bounded on both sides by Stratum III, which was the original structure fill
V	Fine eolian sand and sandy loam; 18 to 30 cm thick	Brown; 7.5YR 5/4 (dry)	Deposit is a combination of natural fill and roof fall; numerous clastic inclusions, as well as a rock pile along the east wall; rocks may have been removed from the roof at demolition and piled in the structure; they are not densely distributed throughout the stratum, but a concentration indicating a single dumping episode
VI	Sandy loam with high density charcoal and ash lenses; 12-18 cm thick	Very dark gray; 7.5YR 3/3 (dry)	Basin-shaped dense ash and charcoal concentration; defined as an intrusive thermal feature (Feature 14); evidence that the pit room depression was used by later occupants

evident in Structure 15 (Fig. 12.56). These layers provide limited evidence of pit room wall construction, evidence of abandonment behavior, and represent multiple post-abandonment episodes. Strata are described in Table 12.29.

Stratum V had small to medium-size adobe clumps and melt mixed with the eolian sand and sandy loam. The clumps showed no sign of plastering or charcoal staining, and extant wall showed no evidence of plastering. Therefore, it was assumed that the adobe represented upper wall fall that collapsed from above the 90 cm of native soil wall. The adobe

is primarily in the lower pit room fill, indicating that the walls may have deteriorated soon after the structure was abandoned.

Stratum V also contained a rock pile that was concentrated above the hearth and near or along the east wall. These rocks formed a discrete deposit that was intentionally placed in the structure. The rocks may have been on the roof and were deposited when the structure was abandoned.

Strata III and VI reflect post-abandonment activities. The discontinuous nature of Stratum III suggests that it was the initial upper fill within the

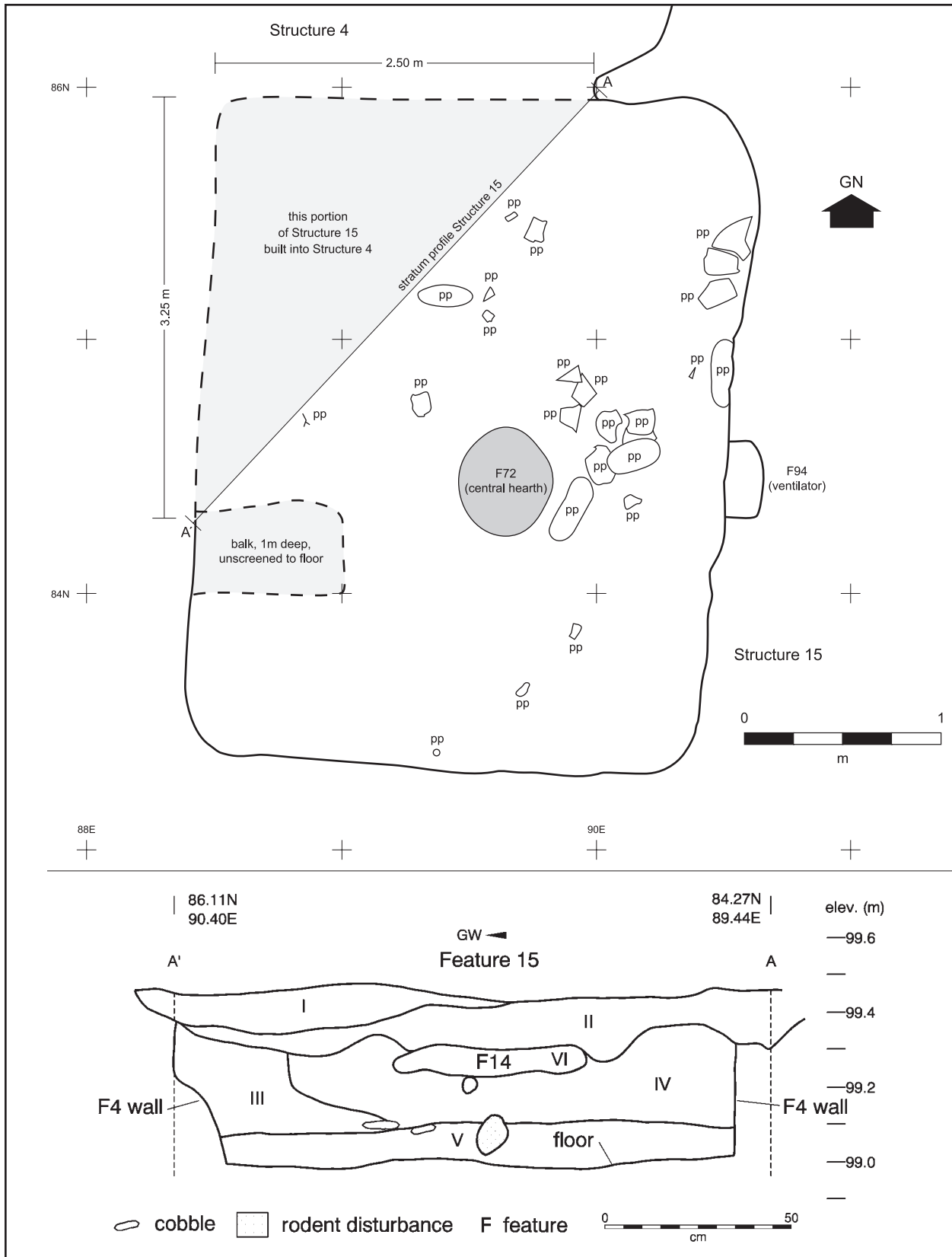


Figure 12.56. LA 6169, Structure 15, plan and stratigraphic profile.

pit room. Stratum III is interrupted by Stratum IV, which is primarily an alluvial deposit formed by successive puddling episodes. Stratum IV terminates well above the floor indicating it was intrusive into the initial pit fill. Therefore it appeared that the pit room partly filled, the fill was removed for an unknown purpose, and the resulting pit was alluvially filled.

Following the formation of Stratum IV, Stratum VI was deposited. It was the charcoal and ash impregnated fill of Feature 14, a relatively large thermal feature. Feature 14 was 40 to 50 cm below the modern ground surface indicating that it was used when Structure 15 was partly, though mostly filled. No pottery was associated with this stratum, but a radiocarbon sample yielded a cal AD 1040 to 1290, two-sigma date range, which would place its use relatively soon after Structure 15 abandonment. The rapidity with which the upper levels of the structure fill were reused suggests that some effort was expended in intentionally filling Structure 15. Feature 14 was built into the pit room depression before it completely filled.

The upper strata of Structure 15 yielded relatively low frequencies of artifacts. Table 12.21 shows the type distribution for the ceramics that were recovered. Tables 12.30 and 12.31 show the lithic and fauna distributions. Decorated pottery is primarily Santa Fe and Galisteo Black-on-white types with a single sherd of Kwahe'e Black-on-white. All utility ware sherds but one were identified as Middle Rio Grande plain or corrugated. These ceramic distributions indicate gradual and probably naturally filling of Structure 15 following abandonment and structure collapse. Faunal remains distribution suggests gradual trash filling since floor and upper fill species distributions are very similar.

*Description.* Structure 15 was a rectangular pit room that measured 3.10 m north-south by 2.50 m east-west by 0.90 m deep (Figs. 12.56 and 12.57, see Fig. 12.6 for structure profile). Based on actual and extrapolated dimensions the estimated floor area was 7.75 sq m. The northwest corner extended into Structure 4 and was missed during excavation. The floor of Structure 15 coincided with the Structure 4

floor elevation, but no other floor features except the central hearth (Feature 72) were found within the actual or projected room limit. It was separated from Feature 16 on the south by a 20- to 40-cm-thick wall. The hearth/ventilator tunnel orientation was 90 degrees east of magnetic north.

*Dating.* An archaeomagnetic sample taken from the central hearth (Feature 72) yielded an AD 1235 intercept date (PB 1156). This date places hearth use between the date range obtained from two archaeomagnetic samples from Feature 16, which had two occupation episodes. The Structure 15 date fits well with the predominance of Santa Fe Black-on-white and anthill sand Middle Rio Grande utility ware pottery that was recovered from the structure floor.

*Construction.* Excavation of Structure 15 yielded limited evidence of house construction. Floors and walls were made of primarily of native soil. The presence of adobe and cobbles in the lower fill suggest that they were used in upper wall construction. No postholes were embedded in the structure floor.

Structure 15 lower walls were excavated into the native soil. All but the northwest walls incorporated Stratum 2 as it has been defined for Area 1. This consolidated soil made up the bulk of structure walls on this site, regardless of time period. The northwest wall was excavated into Structure 4 fill. While it is assumed that the less consolidated Structure 4 structure fill had to be stabilized, there was no direct evidence of this strategy. Where the wall remained, it met the floor at a 90 degree angle. The adobe in the lower pit room fill indicates that the upper walls were partly constructed of puddled or coursed adobe. An added wall height of 90 cm would have provided head room sufficient for an 1.80-m-tall individual.

No evidence of the roof, except for the sandy loam in Stratum V was encountered. Logically, if the structure walls were built to a height that accommodated a standing person, then the roof could have been laid flat between the walls. The function of the cobble pile found above the room floor could not be determined,

Table 12.30. LA 6169 Summary of Fauna from Structure 15

	Upper Fill		Floor Fill and Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-lrg bird	-	-	3	6.3%	3	2.0%
Small mammal	18	17.6%	5	10.4%	23	15.3%
Small-medium mammal	2	2.0%	1	2.1%	3	2.0%
Medium to large mammal	6	5.9%	7	14.6%	13	8.7%
Large mammal	4	3.9%	-	-	4	2.7%
Black-tailed prairie dog	1	1.0%	-	-	1	0.7%
Gunnison's prairie dog	-	-	1	2.1%	1	0.7%
Botta's pocket gopher	1	1.0%	-	-	1	0.7%
Yellow-faced pocket gopher	-	-	2	4.2%	2	1.3%
Ord's kangaroo rat	4	3.9%	1	2.1%	5	3.3%
Banner-tailed kangaroo rat	1	1.0%	-	-	1	0.7%
<i>Peromyscus</i> sp.	-	-	1	2.1%	1	0.7%
Desert cottontail	43	42.2%	15	31.3%	58	38.7%
Black-tailed jackrabbit	6	5.9%	4	8.3%	10	6.7%
Medium artiodactyl	3	2.9%	-	-	3	2.0%
Deer or elk	2	2.0%	-	-	2	1.3%
Mule deer	2	2.0%	-	-	2	1.3%
Large bird	2	2.0%	4	8.3%	6	4.0%
Turkey	2	2.0%	2	4.2%	4	2.7%
Paserines	1	1.0%	-	-	1	0.7%
Lizards	-	-	1*	2.1%	1	0.7%
Nonvenomous snakes	1	1.0%	-	-	1	0.7%
Red-spotted or plains toad	2**	2.0%	-	-	2	1.3%
Woodhouse's toad	1	1.0%	1	2.1%	2	1.3%
Total	102	100.0%	48	100.0%	150	100.0%
Immature (1/2-2/3 grown)	-	-	1	2.1%	1	0.7%
Light/scorch	1	1.0%	-	-	1	0.7%
Heavy or black	1	1.0%	1	2.1%	2	1.3%
Complete	25	24.5%	6	12.5%	31	20.7%
>75% complete	3	2.9%	4	8.3%	7	4.7%
50-75% complete	4	3.9%	2	4.2%	6	4.0%
25-50% complete	17	16.7%	5	10.4%	22	14.7%
<25% complete	53	52.0%	31	64.6%	84	56.0%

\* each indicates a skeleton counted as one specimen

but some of the rock may have been placed on the roof to stabilize the roofing material or they may have been incorporated into the upper wall.

The structure floor was packed and smoothed Stratum 2. There was no evidence of formal preparation or plastering. The floor was in good condition, except for occasional rodent burrows. The floor was only lightly charcoal

stained.

*Features.* One floor feature, Feature 72, the central hearth, was found. The only wall feature was the ventilator and tunnel (Feature 94). These are briefly described.

Feature 72, central hearth, was roughly circular in outline with steep sides and a maximum depth of 22 cm (Figs. 12.58, 12.59). It measured 38 cm north to south by 36 cm east to

Table 12.31. LA 6169, Structure 15, Upper Fill and Floor Fill and Floor, Chipped and Ground Stone Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	12	40	6	20	1	3.3	2	6.6	9	30	-	-	30	20.2
Flake	40	38.8	22	21.3	8	7.7	5	4.8	28	27.1	-	-	103	69.5
Tested Rock	2	50	2	50	-	-	-	-	-	-	-	-	4	2.7
Core, Multiplatform	-	-	-	-	-	-	-	-	3	100	-	-	3	2
Angular Debris, Utilized	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	1	50	1	50	-	-	2	1.3
Biface	1	50	-	-	-	-	1	50	-	-	-	-	2	1.3
Scraper, Hide	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100	1	<1
Mano, Two-hand	-	-	-	-	-	-	-	-	1	100	-	-	1	<1
Total	55	37.1	30	20.2	9	6	9	6	44	29.7	1	<1	148	100



Figure 12.57. Structure 15, in progress.



west. The hearth pit was excavated into the poorly consolidated gravel layer (Stratum 4) that underlies the site. The fill exhibited two stratigraphic layers. The upper layer, Stratum A, was grayish brown (10YR 5/2, dry) sandy loam with 20 percent ash and one or two charcoal flecks. Stratum B was light gray (10YR 6/1) ash with almost no sandy loam and little or no charcoal. No artifacts were recovered from these strata. They represented evidence of the last fires used in the structure. The hearth lip had an oxidized color and was 5 to 8 cm thick and 5 cm high. The sides were lightly oxidized as was the floor that skirted the lip of the feature. Ethnobotanical analysis of hearth fill yielded *Zea mays* corn cupules (n = 2) and a glume. Wood charcoal was typical for intramural hearths; juniper, piñon, and cottonwood/willow were identified (Tables 12.32–12.35).

The ventilator (Feature 94) was excavated into the east wall (Figs. 12.60, 12.61). The tunnel was 60 cm long by 30 cm wide by 30 cm high. It joined a vertical shaft that was 24 cm north-south by 28 cm east-west by 66 cm high. The ventilator had filled naturally with low frequencies of pottery and lithics. The tunnel opening is level with the floor and it slopes up slightly to its junction with the shaft. The shaft recurves to the wall and was only separated from the wall by 10 cm of Stratum 2.

*Artifact Assemblage.* The upper fill of Structure 15 yielded moderate frequencies of artifacts. Pottery and animal bone are the most abundant. All of the structure fill was analyzed, except for the northwest portion, which intruded into Structure 4 and was not recognized as a Coalition period deposit during the excavation of Structure 4.

The 206 ceramics were predominantly

Table 12.32. LA 6169 Structure 15 Floor Features, Seeds and Fruits (frequency per liter)

Feature 15	
<b>Non-cultural</b>	
Annuals	
Chenopodium	0.5
<i>Portulaca</i>	2

Table 12.33. LA 6169 Structure 15 Floor Features, Other Plant Parts, Abundance

	Plant Part	Feature 15
<b>Cultural</b>		
Gramineae	Stem	1
<i>Zea mays</i>	Cupule	2
	Glume	1

Table 12.34. LA 6169 Structure 15 Floor Features, Wood from Flotation Sample by Weight

Feature	Feature 15
<i>Juniperus</i>	.10g
<i>Pinus edulis</i>	.01g
Salicaceae ( <i>Populus/Salix</i> )	.10g
Non-coniferous wood	.04g

Table 12.35. LA 6169 Structure 15 Floor Features, Macrobotanical and C-14 Samples, Count and Weight

	Plant Part	Feature 15
<i>Juniperus</i>	Wood	17/2.70g
Salicaceae ( <i>Populus/Salix</i> )	Wood	1/.19g
<i>Sarco/Atriplex</i>	Wood	10/1.08g
<i>Zea mays</i>	Cob	1/.90g

Middle Rio Grande Plain and Corrugated pottery types. The decorated pottery was Santa Fe Black-on-white with lesser amounts of Galisteo Black-on-white. No Coalition period intrusive pottery was identified. Utility wares were primarily jar body and rim sherds that are tempered with an almost equal proportion of local sandstone and the anthill sand from the Pajarito Plateau. Decorated bowls dominate the white wares with only two jar sherds identified. This is the common pattern for Coalition period vessel form assemblages.

Ninety lithic artifacts were recovered from the upper fill in Feature 15. The majority of the assemblage consisted of chalcedony (42 percent) and chert (27 percent). Low frequencies of nonvesicular igneous materials (n = 19), quartzite (n = 4), Jemez obsidian (n = 3), vesic-

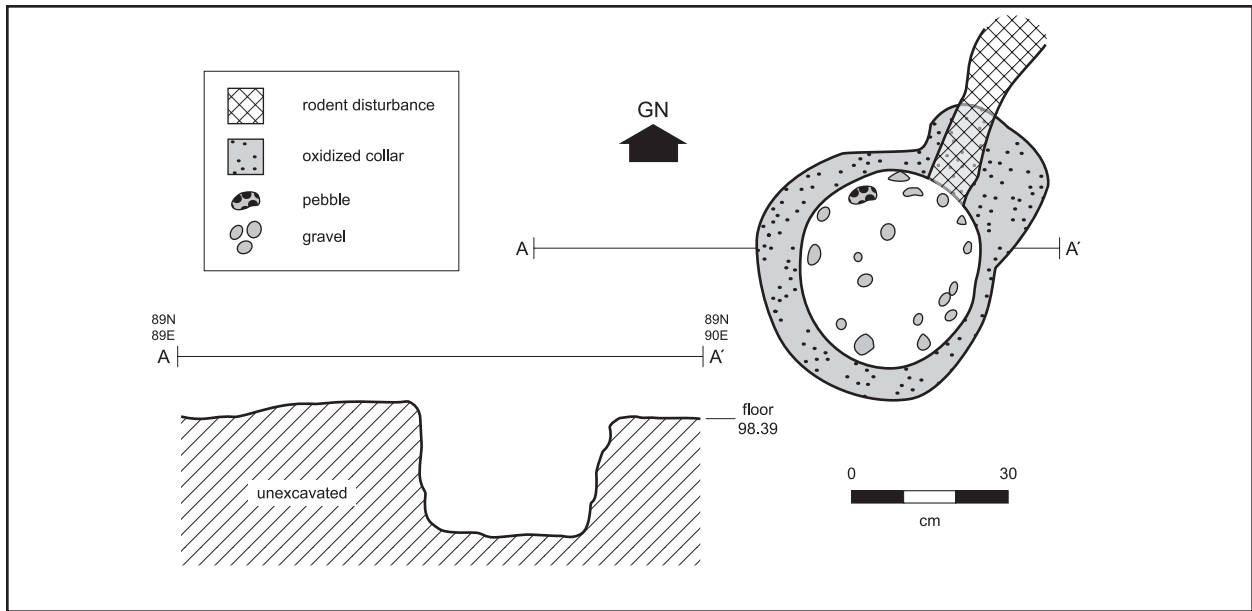


Figure 12.58. Structure 15, Feature 72, plan and profile.



Figure 12.59. Structure 15, Feature 72.

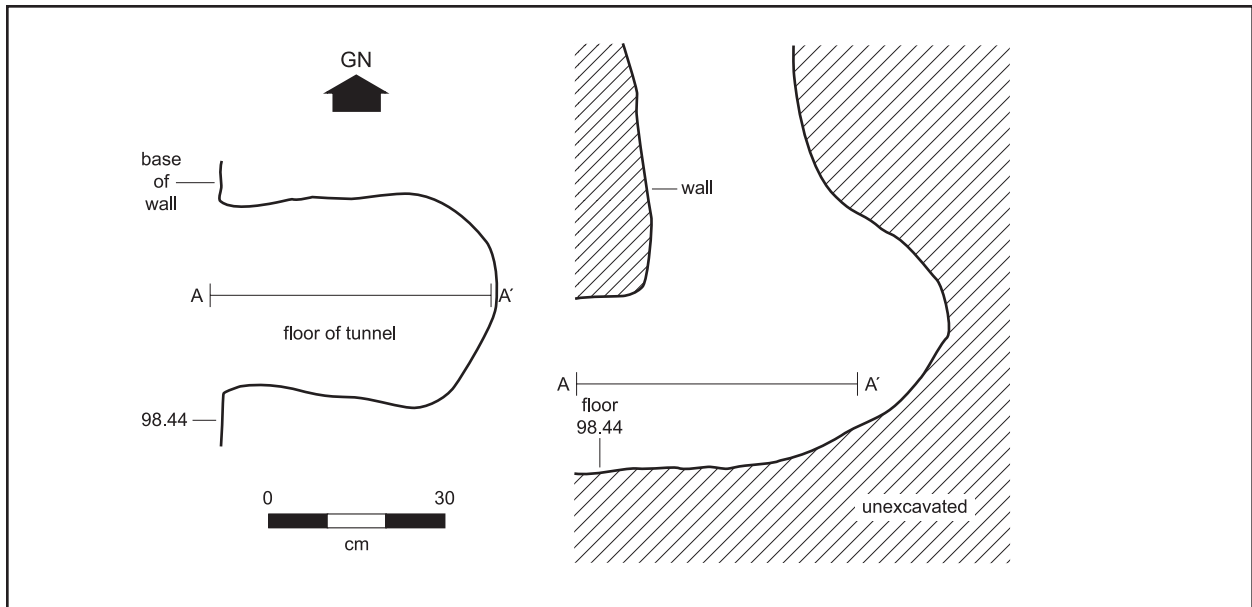


Figure 12.60. Structure 15, Feature 94, plan and profile.

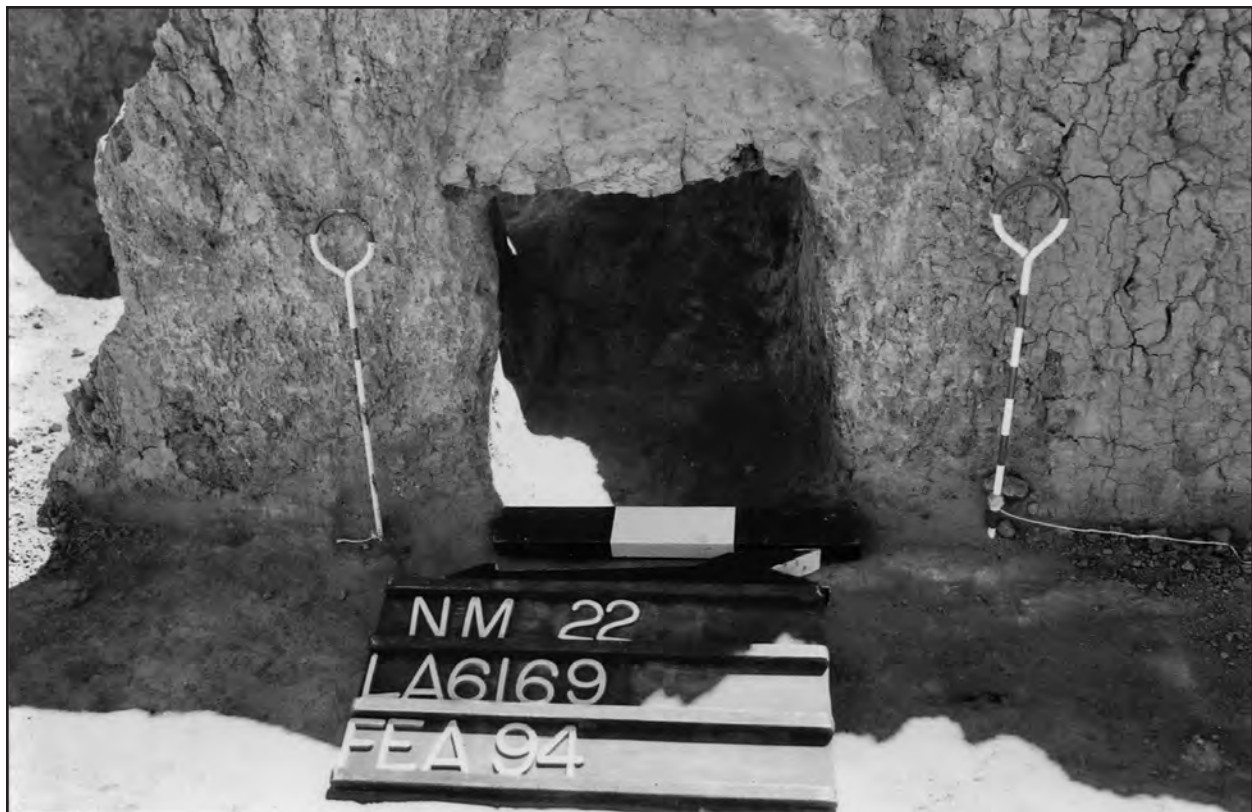


Figure 12.61. Structure 15, Feature 94.

ular igneous (n = 1), and "other" material (n = 1) were recovered.

The lithic assemblage reflects an emphasis on later stages of secondary core reduction and tertiary tool manufacture. Ninety percent of all whole flakes lack dorsal cortex and the majority of platforms are either single-faceted (55 percent) or collapsed (22 percent). Formal tool manufacture is represented by both chalcedony (n = 2) and obsidian (n = 1) flakes with retouched platforms. Two multiplatform cores, manufactured from nonvesicular igneous materials were also recovered.

Unutilized flakes (67 percent) and unutilized small angular debris (21 percent) compose the majority of the assemblage. The upper fill in the structure exhibits five tools, two utilized flakes and piece of angular debris, a biface, and a hide scraper. With the exception of the hide scraper, all tools exhibit unidirectional wear consistent with scraping on bone or wood. The hide scraper had unidirectional rounding, a polished edge, and rounded shoulders. This type of wear is diagnostic of scraping hides.

An indeterminate metate fragment made of vesicular rhyolite was also recovered.

Upper fill fauna included a variety of reptiles and small and large mammals and birds. The high frequency of cottontails is unusual, but may be inflated by the number of foot bones recovered. Turkey is present in low numbers similar to Structures 10 and 16. Burning was observed on one bone suggesting most of the bone was discarded as a sheet trash deposit and washed into Structure 15.

Structure 15 contained a surprisingly high number of debris and artifacts from floor fill and floor contact, considering its size and assumed seasonal occupation. Twenty-five artifacts were piece-plotted including 14 sherds, a core/chopper, a chert flake, 3 manos, and 2 ground stone fragments, 1 animal bone, and 1 human incisor. The incisor may have come from one of the juvenile burials (Features 68 and 75) in the shaft of Feature 66 (the ventilator for Structure 4).

Including the piece-plotted pottery, 98

sherds were recovered from floor fill and floor contact (Table 12.21). The pottery included a reconstructible Santa Fe Black-on-white bowl. The sherds showed no evidence of post-firing modification, and therefore may have been temporary storage or processing vessels rather than scoops. This partial vessel and the ground stone suggest food processing for consumption. The absence of metates or bins, as were found in Feature 16, indicates less emphasis on plant processing for transport and/or storage. Pottery types were similar to the upper fill. Decorated pottery dominated by Santa Fe Black-on-white occurred with lesser amounts of Galisteo Black-on-white. No nonlocal Coalition period pottery was identified. Utility wares were primarily jar body and rim sherds that are tempered with an almost equal proportion of local sandstone and the anthill sand from the Pajarito Plateau. Decorated bowls dominated the white wares, only three jar sherds were identified. This is the common pattern for Coalition period vessel form assemblages.

Fifty-eight lithic artifacts were recovered from the floor fill and floor in Feature 15 (Table 12.31). The majority of the assemblage was composed of nonvesicular igneous materials (43 percent) and chalcedony (28 percent). Low frequencies of Jemez obsidian (n = 6), chert (n = 6), and quartzite (n = 5) were also represented.

The overall assemblage indicates an emphasis on later stages of secondary core reduction; 80 percent of the whole flakes lacked dorsal cortex. Another 11 percent exhibit only partial dorsal cortex. The nonvesicular igneous material category is the only material class with evidence of primary reduction—two flakes exhibit 100 percent dorsal cortex. A single Jemez obsidian flake exhibits a retouched platform indicative of formal tool manufacture. One multiplatform core, manufactured from nonvesicular igneous material, was also recovered.

Unutilized flakes (72 percent) and unutilized small angular debris (18 percent) make up the majority of the assemblage. A single distal drill fragment manufactured from Jemez

obsidian was recovered from the floor. The tool exhibits rotary wear patterns on the shaft and tip typical of use as a drill. It is likely that the tool was used and broken in the structure.

A complete two-hand mano, manufactured from coarse-grained rhyolite, was recovered from the floor.

Fauna recovered from the floor and floor fill contexts included rabbit and turkey and a low frequency of large mammal bone (Table 12.30). This distribution is similar to the upper fill suggesting that lower contexts maybe partly mixed with post-occupation debris. Cottontail and black-tailed jackrabbit are common in all of the Coalition period pit rooms suggesting alternatively that the floor assemblage reflects terminal occupation consumption or perhaps some raw material stockpiling or storage. Interestingly, few large mammal bones were recovered from Structure 15, indicating an almost complete dependence on field hunting for meat.

Corn cupules and glumes were recovered from the floor (see Chapter 23, McBride and Toll) (Table 12.33). These were charred indicating that cobs may have been used as fuel and that corn was prepared or consumed within the structure. However, little evidence of corn grinding or storage was found in Structure 15. Corn may have been brought to the field house or consumed as ears ripened in the late summer.

*Abandonment.* Artifacts recovered from the floor and floor fill suggest that Structure 15 was partly cleaned at abandonment. Although it is speculation, the black-on-white pottery and ground stone may have been used in the structure and reflect terminal processing and consumption activities, as does the ash from the central hearth. Based on the stratigraphy, as previously described, there were at least three abandonment and post-abandonment events. Stratum V contained sandy loam, adobe, and cobbles that collapsed into the structure fill soon after abandonment. This debris is interpreted as upper wall fall or roofing material. There was a 10 cm lense of fill lacking structure debris that accumulated immediately after abandonment. This is a thin

layer, suggesting that structure collapse followed soon after abandonment. The interruption of Stratum III by Stratum IV indicated that the pit room had partly filled and the fill was partly removed, possibly for use in nearby pit room construction. This declivity was filled by Stratum IV. Stratum VI, Feature 14 thermal feature fill, overlaid Stratum IV, indicating that the facility was used after the depression was mostly filled. Finally, a combination layer of Stratum II and Stratum VI filled in the remainder of the structure. It remained capped until its excavation.

*Summary.* Structure 15 was an average-sized Coalition period pit room. Pit rooms are considered to be primary seasonal residences or structures. These small structures rarely have floor space to accommodate more than one or two people. Typically, as with Structure 15, these structures have a central hearth and few other intramural features. Structure 16, from this site and a few pit rooms from the Cochiti Dam excavations (Lange 1968b) are exceptions in that they have mealing features or other intramural processing or furniture-like benches.

Because Structures 15 and 16 form a two-room row, it is tempting to characterize them as contemporary with Structure 15 functioning as a sleeping room and Structure 16 functioning as a processing or special activity room. Archaeomagnetic dates indicate that Structure 15 was occupied between the temporal gap indicated by the two Structure 16 archaeomagnetic dates. Light trash filling of Structure 15 indicates that it may be later than Structure 70, which experienced the greatest or most intense post-abandonment trash filling.

Structure 15 represents a component of a biseasonal settlement pattern that was well-established by the early 1200s. This small-scale use of the terraces may have been supplanted or augmented by later or concurrent construction of puddled adobe surface rooms. At the North Bank site (Bussey 1968), pit rooms and surface structures did co-occur, but they were not unquestioningly shown to be contemporaneous. Pit room construction and occupation

may reflect a highly flexible agricultural-based settlement pattern that changed throughout the Coalition and early Classic occupation of the area until the large pueblos, such as the Herrera and Pueblo del Encierro sites, were built and occupied.

**Structure 16.** Structure 16 was a deep, subrectangular, Coalition period pit room located in Area 1, Study Unit 12. Its north wall abuts Structure 15. It measured 2.55 m north-south by 2.20 m east to west by 1.20 m deep. It occurred within Grids 80–82N/88–89E. The structure filled naturally and no trash deposition episodes were observed. Adobe encountered throughout the structure fill indicated that a portion of the upper wall was constructed of puddled adobe. The floor was unprepared and densely populated by features. The walls exhibited evidence of remodeling or stabilizing.

Floor excavation revealed three, east-west oriented, circular adobe-collared grinding or mealing bins (Features 102–104) that lacked metates. Seven other intramural features included a hearth with a southeast ventilator and shaft that showed evidence of remodeling, and a pot rest. De facto refuse included 11 ground stone fragments (1 exhibiting pigment), 2 choppers, a hafted maul, 2 tested cobbles or hammerstones, and a turquoise fragment. The artifacts and features and limited unused floor space indicate a wide range of diurnal processing activities. An adobe ledge or step along the south wall was built on top of Feature 106 indicating that there were at least two separate occupations.

Adobe encountered in the structure fill suggested a walled superstructure. Abandonment was planned, but the floor was not completely cleaned of tools and containers. The size suggests that it was a seasonal structure suited to one or two people at a time.

Archaeomagnetic dating of two thermal features supported the observation that Structure 16 had two temporally distinct occupations with intercept dates of AD 1225 (Feature 130) and AD 1245 (Feature 105). These dates are consistent

with the ceramic manufacture dates indicating occupations during the early to middle Coalition period.

*Excavation Strategy.* Initially Structure 16 was identified as an adobe-filled pit. The presumed small pit was cross-sectioned until it was apparent that the pit wall was not a limit but instead more collapsed adobe. Further examination determined that the pit was actually a pit room. It was divided into north and south halves. The south half was excavated in 20 cm levels and screened with 1/4 inch mesh to within 15 cm of the floor. The resulting excavated wall was profiled and the north half was excavated without screening to the floor fill level. At 15 cm above the floor, the structure was divided into quadrants. The fill was removed and screened through 1/8 inch mesh. Artifact and feature recording and sample collection followed standard procedures. Once the structure was completely defined the walls that exhibited remodeling were dismantled to determine the nature and extent of that activity.

*Stratigraphy.* Three stratigraphic layers were evident in Structure 16 (Table 12.36). These layers provide limited evidence of pit room wall construction and evidence of abandonment behavior.

Stratum V had small to medium-size adobe clumps and melt mixed with the eolian sand and sandy loam. The clumps showed no sign of plastering or charcoal staining and the extant wall showed no evidence of plastering either. Therefore, it was assumed that the adobe represented upper wall fall that collapsed from above the 90 cm of native soil wall. The adobe is primarily in the lower pit room fill indicating that the walls may have deteriorated soon after the structure was abandoned.

Strata II and IV seem to reflect two filling episodes or processes. Stratum II is typical of the pit room fill found in Features 15 and 70: adobe clumps or clods mixed with the usual sandy loam. This layer remains from relatively gradual filling and collapse of the superstructure and roof. Stratum IV is a massive adobe deposit that appears to have melted in a single

Table 12.36. LA 6169, Structure 16 Stratigraphic Descriptions

Designation	Description	Munsell Color Range	Comments
I			10 to 15 cm of top soil removed by mechanical scraping; same as Stratum 1 for Area 1
II	Fine sandy loam, 45 to 60 cm thick	Yellowish brown; 10YR 3/4 (dry)	Mix of natural fill and adobe from wall collapse and artifacts from light trash-filling and natural deposits.
III	Medium-grained sandy loam; 25 to 35 cm thick	Pale brown; 10YR 6/3 (dry)	This stratum is a mixture of wall melt, closing fill and floor fill. There were floor and floor fill artifacts, a cluster of cobbles around the mealing bins. Charcoal and ash were visible, but were probably spread from the two intramural thermal features.
IV	Adobe melt	Pale brown; 10 YR 4/3 (dry)	This was a layer of solid adobe melt that occurred in the south half of the room. This layer began near the top of the south wall and cascades down to the floor. It may be the remains from a melted wall.

Table 12.37. LA 6169, Structure 16, Upper Fill and Floor Fill and Floor, Chipped and Ground Stone Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		N	%
	N	%	N	%	N	%	N	%	N	%	N	%		
Angular Debris	44	52.3	2	2.3	3	3.5	5	5.9	30	35.7	-	-	84	22.3
Flake	155	57.2	4	1.4	4	1.4	7	2.5	101	37.2	-	-	271	71.8
Flake, Sharpening	-	-	-	-	-	-	1	100.0	-	-	-	-	1	0.2
Core, Multiplatform	2	40.0	-	-	-	-	-	-	3	60.0	-	-	5	1.3
Chopper, Unifacial	-	-	-	-	1	100.0	-	-	-	-	-	-	1	0.2
Flake, Utilized	-	-	-	-	-	-	3	60.0	2	40.0	-	-	5	1.5
Flake, Marg Retouch	-	-	-	-	-	-	2	100.0	-	-	-	-	2	0.5
Mano, Unknown	-	-	-	-	-	-	-	-	1	50.0	1	50.0	2	0.5
Mano, Two hand	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.2
Metate, Unknown	-	-	-	-	-	-	-	-	-	-	1	100.0	1	0.2
Grinding slab	-	-	-	-	-	-	-	-	2	100.0	-	-	2	0.5
Grooved axe	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.2
Cobble with pigment	-	-	-	-	1	100.0	-	-	-	-	-	-	1	0.2
Total	201	53.3	6	1.6	9	2.3	18	4.7	141	37.4	2	0.5	377	100.0

Table 12.38. LA 6169, Structure 16, Fauna Summary

	Upper Fill		Floor Fill and Floor		Hearth, Feature 130		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-lrg bird	-	-	7	15.9%	-	-	7	10.3%
Small mammal	-	-	4	9.1%	9	81.8%	13	19.1%
Large mammal	-	-	1	2.3%	-	-	1	1.5%
Gunnison's prairie dog	1	7.7%	3	6.8%	-	-	4	5.9%
Desert cottontail	2	15.4%	9	20.5%	2	18.2%	13	19.1%
Black-tailed jackrabbit	-	-	3	6.8%	-	-	3	4.4%
Medium artiodactyl	-	-	5	11.4%	-	-	5	7.4%
Pronghorn	-	-	1	2.3%	-	-	1	1.5%
Large bird	2	15.4%	2	4.5%	-	-	4	5.9%
Medium-large bird	1	7.7%	-	-	-	-	1	1.5%
Turkey	7	53.8%	9	20.5%	-	-	16	23.5%
Group Total	13	100.0%	44	100.0%	11	100.0%	68	100.0%
Fetal or neonate	-	-	1	2.3%	-	-	1	1.5%
Immature (1/2-2/3 grown)	-	-	1	2.3%	-	-	1	1.5%
Light to heavy	-	-	1	2.3%	2	18.2%	3	4.4%
Heavy or black	-	-	3	6.8%	1	9.1%	4	5.9%
Heavy to calcined	-	-	-	-	4	36.4%	4	5.9%
Calcined	1	7.7%	1	2.3%	4	36.4%	6	8.8%
Complete	2	15.4%	5	11.4%	-	-	7	10.3%
>75% complete	2	15.4%	6	13.6%	-	-	8	11.8%
50-75% complete	2	15.4%	2	4.5%	-	-	4	5.9%
25-50% complete	4	30.8%	7	15.9%	2	18.2%	13	19.1%
<25% complete	3	23.1%	24	54.5%	9	81.8%	36	52.9%

episode and reformed along the south wall and on the floor. Few artifacts were recovered from the adobe and it is not composed of individual clods. One possibility is that the adobe was a stepped entry that melted after abandonment. It reaches to near the mealing bins, but does not cover them. The lower melt does cover part of Feature 106, a small ash pit. Stepped entries into small pit rooms are not uncommon.

The upper fill ceramic artifact assemblage has low counts. (Table 12.21). This low frequency is similar to Structure 15, suggesting gradual or natural filling of the structure by Coalition period sheet trash, derived from subsequent occupations. The deposit had mostly Santa Fe Black-on-white and Middle Rio Grande utility ware pottery. This assemblage composition is typical of Coalition period refuse that has been found in all the deep pit rooms, except for Structure 70, which had

some Northern Rio Grande utility ware.

The lithic artifacts recovered from the pit room fill reflect natural filling with sheet trash deposits formed by repeated seasonal residential occupations. Core reduction debris of locally available andesite/basalt/rhyolite predominate with four pieces of utilized debitage and three ground stone fragments (Table 12.37).

Faunal assemblage recovered from the upper fill of Structure 70 included an unusually high percentage of turkey, but the sample size is small (Table 12.38). Overall, the 13 animal bones reflect sheet trash deposition.

*Description.* Structure 16 is a deep, subrectangular, Coalition period pit room with its north wall abutting the south wall of Structure 15. The pit room measured 2.55 m north-south by 2.20 m east-west by 1.20 m deep (Figs. 12.62, 12.63). The estimated floor area was 6.12 sq m. Floor excavation revealed three, east-west ori-



ented, circular adobe-collared grinding or mealing bins (Features 102–104) that lacked metates. Seven other intramural features included a hearth with a southeast ventilator and shaft that showed evidence of remodeling, and a pot rest. Evidence of remodeling and multiple thermal features indicate that Structure 16 saw intermittent seasonal use for many years. Archaeomagnetic dating indicates that there may have been two temporally discrete occupations. The early occupation (AD 1220) incorporated Features 106, 107, 128, 130, and 154. The ventilator faced east during this first occupation. Approximately 20 years later, AD 1240, the early features were filled and sealed (at least in the case of the hearth, Feature 130). The mealing bins and a hearth, Feature 105, were built and the ventilator was remodeled to face the south. An adobe step was built at the base of the south wall covering Feature 106.

*Construction.* Excavation of Structure 16 yielded limited construction evidence. Floors and remaining walls used native soil with abundant adobe in the structure fill indicating a puddled adobe superstructure. No postholes were found.

Structure 16's lower walls were excavated into the native soil incorporating Stratum 2. The existing walls ranged from 0.92 to 1.18 m high (Fig. 12.62, 12.63101). The walls are vertical to incurving. It appeared that the incurving profile was created to accommodate remodeling or stabilizing the wall with adobe pads or clods. The use of adobe was visible on the north and east walls. The east wall exhibited a 50-cm-high incurving profile that was partly filled with adobe. The excavator observed that the lower wall had collapsed and was rebuilt. Patches of the north, east, and west walls are well smoothed or burnished, creating a plaster-like finish. No actual plaster finish was observed.

The south wall was excavated into native soil, but the lower 50 cm was obscured by an adobe bench or platform that extended 50 cm into the room to the north. Adobe benches or platforms were common in pit rooms at LA

6455, the Herrera site (Lange 1968b). The Herrera site pit rooms post-dated Structure 16, which may be an early expression of the adobe bench architectural detail. Other wall remodeling is evident in the southeast corner at the ventilator opening and shaft. The excavator observed that the wall had been excavated and partly filled with adobe, perhaps to plug an early ventilator shaft. The vent tunnel is only 15-cm long, leaving 10 cm between the interior of the wall and the vent shaft. This thin dividing wall may have been unstable, requiring regular maintenance.

No evidence of the roof, except for the sandy loam in Stratum III, was encountered. Logically, if the structure walls were built to a height that accommodated a standing person, then the roof could have been laid flat between the walls. The function of the cobbles found above the room floor could not be determined, but some of the rock may have been placed on the roof to stabilize the roofing material.

The structure floor was packed and smoothed. It was in good condition and was finished prior to the construction of the hearth and milling features. The mealing bin collars were placed on top of the finished floor. Finished floor extends to the lip of the two hearths. No floor was found below the adobe bench along the south wall. This suggests that the bench was added before the floor was finished. The density of floor features and evidence for remodeling suggests that Structure 16 may have served numerous purposes during its use-life.

*Features.* Eleven floor features were exposed (Figs. 12.62, 12.63). Three features (102, 103, and 104) were mealing bins. There were two well-used thermal features (Features 105 and 130). The other features were miscellaneous floor pits. Feature 129, the ventilator opening and shaft, was the only wall feature. Table 12.39 provides basic descriptive information.

Features 102, 103, and 104 were the most interesting and unique of the floor features (Figs. 12.64 and 12.65). These were three morphologically and structurally similar circular,

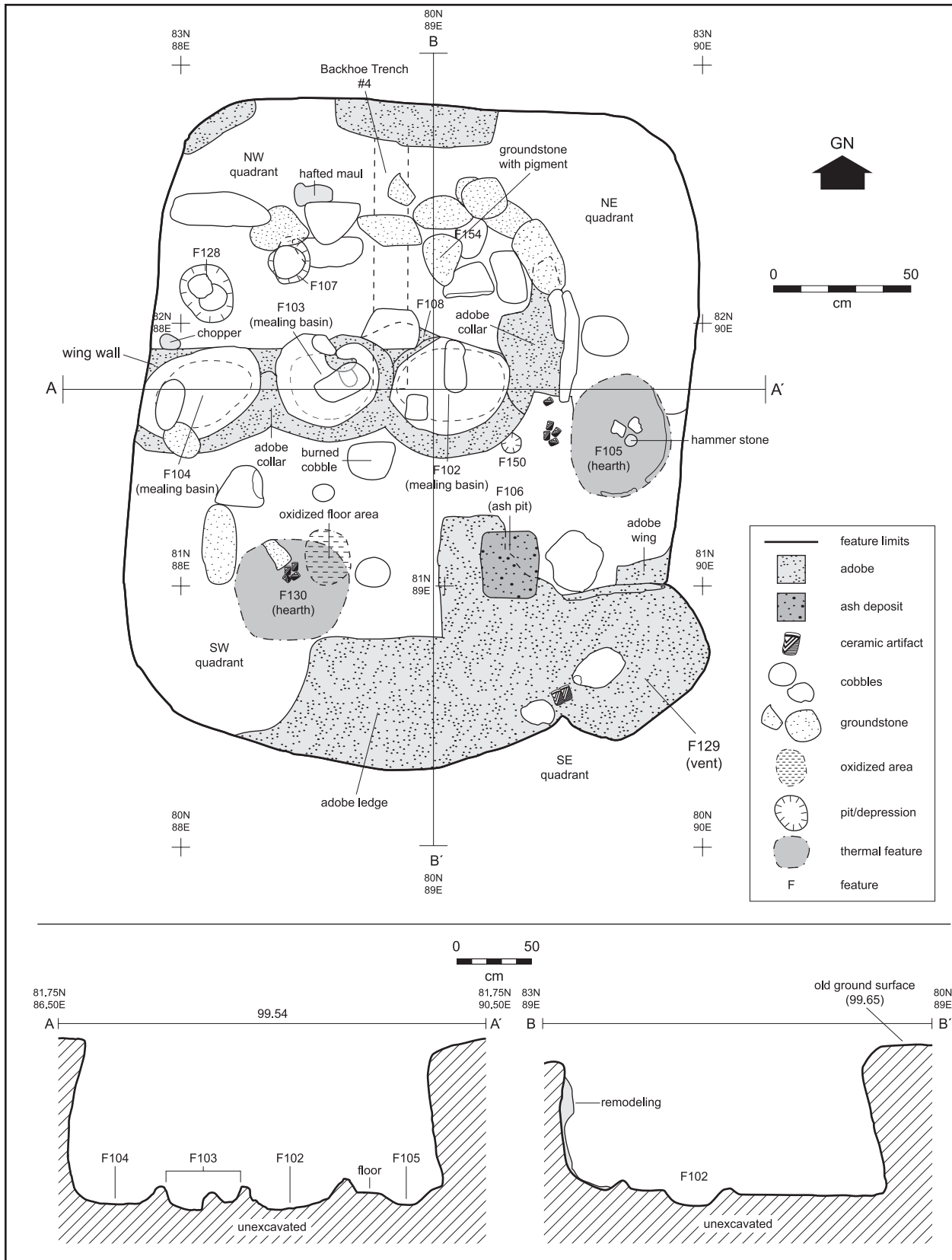


Figure 12.62. Structure 16, plan and profile.



Figure 12.63. Structure 16, Features 102, 103, 104.

adobe-lined, and collared basins. These basins were interpreted as the catchment basins that may have been lined with baskets. Metates would have been set along the north perimeter of the basin and ground corn or seeds would have accumulated in the basin. Three bins or basins are consistent with the ethnographically documented gradations to corn-grinding. Fine, medium, and coarse-ground meal would have been used for different domestic and ritual purposes. In her synthesis of Pueblo II-III subterranean Anasazi mealing rooms, Jeannette Mobley-Tanaka (1997) found only one example with a hearth. She suggests that the hearth was not used concurrently with the mealing facility. Anasazi mealing rooms generally have about 5 to 6 sq m of floor space and from two to five bins or grinding facilities.

Features 102, 103, and 104 are visually similar and they are structurally integrated indicating that they were built and presumably used at the same time. No similar features are reported for pit rooms from previous Cochiti area excavations (Lange 1968a). Additions to

the mealing bin complex include a cobble and adobe rim extending from the northeast edge of Feature 102 to the north that may be a metate rest. Feature 103 exhibited an incomplete north wall that was remodeled into an adobe curlicue. This curlicue appeared stylistic and not functional. To the north of the bins were a concentration of adobe and cobbles that may have been disarticulated leg rests. The mealing bins are mostly intact suggesting that they represent the terminal use of the pit room. The multiple hearths and a remodeled ventilator shaft relate to two or more use episodes that preceded the grinding activities.

These features did not yield macrobotanical evidence of corn processing. This is not surprising since it is unlikely that charred corn would have been ground. The pollen evidence was also inconclusive. Low concentration values of cactus and weedy annuals were observed for all three features (see Holloway, Chapter 24). There was not an unusually high pollen value for corn that would indicate long-term or high-volume processing.

Table 12.39. LA 6169, Structure 16, Feature Data

Feature No.	Type	Dimensions (LWD in cm)	Fill	Comments
102	Mealing basin	48 X 33 X 17	Dark yellowish brown (10YR 4/4) sandy loam that has puddled in the basin. The fill is clean.	Adobe-collared and constructed as a unit with Feature 103 and 104 mealing basins
103	Mealing basin	39 X 31 X 13	Yellowish brown (10YR 5/4 ) blocky sandy loam. Fill appeared to be placed feature or it may reflect early adobe melting on and above the floor following abandonment.)	Remodeled with a plastered curl that appeared more aesthetic than functional.
104	Mealing basin	44 X 31 X 10	Same as Feature 103.	Sculpted and plastered basin collar
105	Hearth	42 X 39 X 13	Upper 2 cm was a light yellowish brown (10YR 6/4) sandy loam with sparse charcoal. Similar to wind blown sand that would follow abandonment. The lower 6 cm were a grayish brown (10YR 5/2) silty loam with ash and dispersed charcoal indicating use as a thermal feature.	Lightly plastered interior with oxidized upper limit. Associated with mealing bins and second occupation.
106	Ash pit	24 X 22 X 8	Pale brown to yellowish brown (10YR 6/3-4) consolidated fine-grained silty loam mixed with ash and very sparse charcoal.	Shallow, oval-outlined and basin-shaped pit filled with a Stratum III ash and charcoal mix. Possible ash pit associated with the first occupation.
107	Small pit	14 X 13 X 9	Yellowish brown (10YR 6/4) sandy loam that lacked charcoal.	Unburned pit with steep walls located north of the mealing bins. Associated with first occupation.
108	Remnant of remodeled basin	25 X 17 X 7		
128	Small pit	23 X 17 X 8	Yellowish brown (10YR 5/4) sandy loam that lacked charcoal	Small basin-shaped pit located north of the mealing bins. No evidence of capping. May pre-date construction and use of the mealing bins. Associated with the first occupation
129	Ventilator opening and shaft	60 X 60 X 40 (o); 45 X 31 X 116 (s)	see text	Vent opening is vaulted rather than a tunnel. At least one remodel episode exposed by excavation
130	Hearth	44 X 38 X 8	Loose light brownish gray (10YR 6/2) silty loam mixed ash and oxidized clay lumps. Charcoal is sparse. Fill contained more than expected animal bone (see text).	Oxidized and well-used hearth that was capped by a layer of floor plaster that was 1 cm thick. This cap is on a layer of Stratum 1 that filled open features following first abandonment.
150	Divot	7 X 7 X 7	Yellowish brown (10YR 6/4) sandy loam that lacked charcoal.	Small, steep-sided pit.
154	Small pit	18 X 14 X 4	Yellowish brown (10YR 6/4) sandy loam that lacked charcoal.	Basin-shaped unburned pit associated with the first occupation.

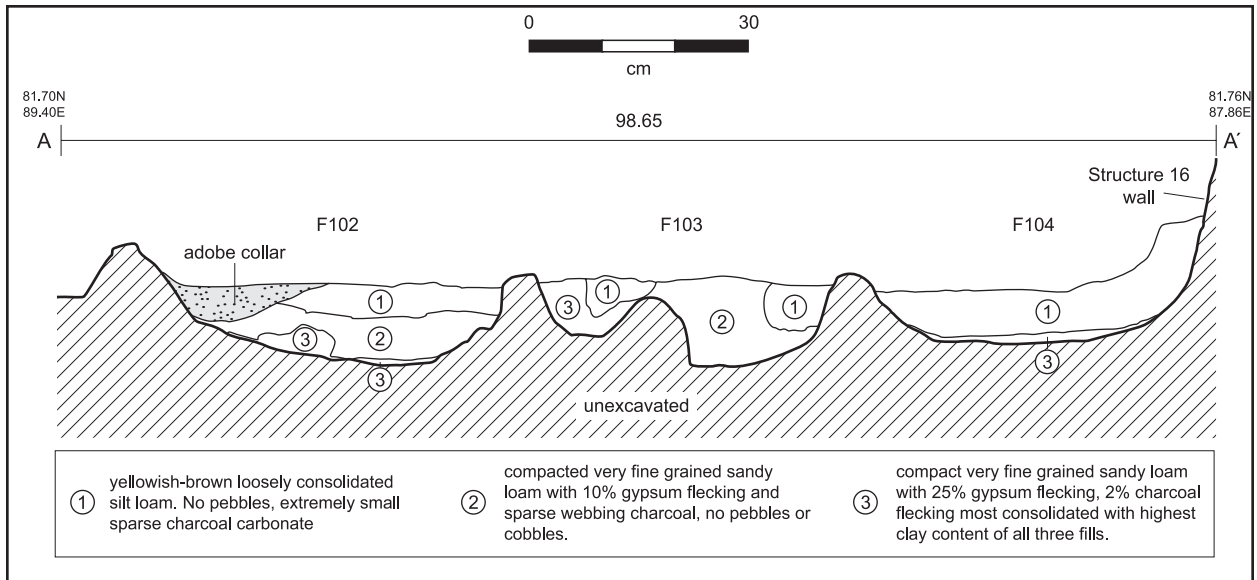


Figure 12.64. Structure 10, Features 101, 102, 103, profiles.



Figure 12.65. Features 103, 104.

Features 105 and 130 were hearths (Figs. 12.66, 12.67). As stated before, hearths are not commonly found associated with mealing facilities. Two hearths in one small room coincide with separate use episodes further indicated by ventilator shaft remodeling and sequential rather than equivalent archaeomagnetic dates. Structures 10, 15, and 70, the other Coalition pit rooms, had a single hearth and ventilator. Those pit rooms have a floor feature assemblage more consistent with low level or seasonal residential occupation and very limited specialized use.

Both Structure 16 hearths exhibited oxidized interiors that were well used. Feature 105 was a typical basin shape. It was associated with the mealing bin occupation. Interestingly, Feature 105 yielded an unusually high frequency of charred cheno-ams and had saltbush as the primary fuel wood (Tables 12.40–12.43). The weedy seeds and non-conifer fuel indicate resource procurement within the immediate environment of the structure.

Feature 130 was flat bottomed and shallow and was associated with the typical small pits that are found in other pit rooms. These small pits included Features 106, 107, and 128, which are shown in Figure 12.66. Feature 130 was unusual because of the 28 animal bones that were recovered. All were burned, which is not the expected pattern when the burning results from cooking or roasting. It is possible that the bones were tossed into an active fire shortly before or in conjunction with the first abandonment of the structure. The later Feature 105 hearth did not yield any burned animal bone. Both hearths yielded a low frequency of charred corn parts.

The ventilator (Feature 129) was excavated into the southeast wall and corner of the pit room (Fig. 12.68). The shaft was dug as an open, vertical channel into the wall from floor to the top of the wall. The pit room wall was then replastered without filling the channel. This left a narrow ventilator shaft. Basically, no tunnel was formed by this method of construction. This replastered wall was 5 to 8 cm thick. This thin wall remained unstable throughout

the two occupations resulting in at least two maintenance episodes. This particular ventilator construction method was used in the construction of the ventilator shafts found in the other Coalition period pit rooms.

*Artifact Assemblage.* Structure 16 appears to have been filled through natural processes and limited intentional refuse deposition. Upper fill artifacts were sampled with one-half the structure screened and the artifacts included in the analysis. The artifact assemblage distribution reflects sheet trash deposition. All floor and floor fill artifacts were recovered and analyzed and they reflect natural filling, but also intentional filling or closure as indicated by the cobble cluster in the north half of the structure.

Upper fill pottery totaled 122 sherds. The assemblage was predominantly Middle Rio Grande Plain and corrugated utility pottery types and Santa Fe Black-on-white. Santa Fe Black-on-white occurred exclusively as bowl sherds, although there were nine undetermined white ware jar sherds that may represent canteens or small water jars. All utility wares were jars that were tempered with rock from local and Pajarito Plateau sources. Utility jars were the dominant vessel form and no sherds showed interior cooking wear suggesting storage as their main function.

Two hundred and seventeen lithic artifacts were recovered from the upper fill in Feature 16. The majority was manufactured from chalcedony (52 percent) and nonvesicular igneous materials (41 percent). Low frequencies of Jemez obsidian ( $n = 10$ ), quartzite ( $n = 3$ ), chert ( $n = 1$ ), and vesicular igneous materials ( $n = 1$ ) were also represented.

The lithic assemblage indicates an emphasis on later stages of secondary core reduction and bifacial tool manufacture. Eighty-eight percent of the whole flakes lack dorsal cortex and 73 percent of flakes with platforms are single-faceted collapsed platforms. Bifacial tool manufacture is indicated by retouched platforms within the obsidian ( $n = 4$ ), nonvesicular igneous material ( $n = 3$ ), and chalcedony ( $n = 1$ ) material categories. An obsidian resharpening flake also represents tool refurbishing

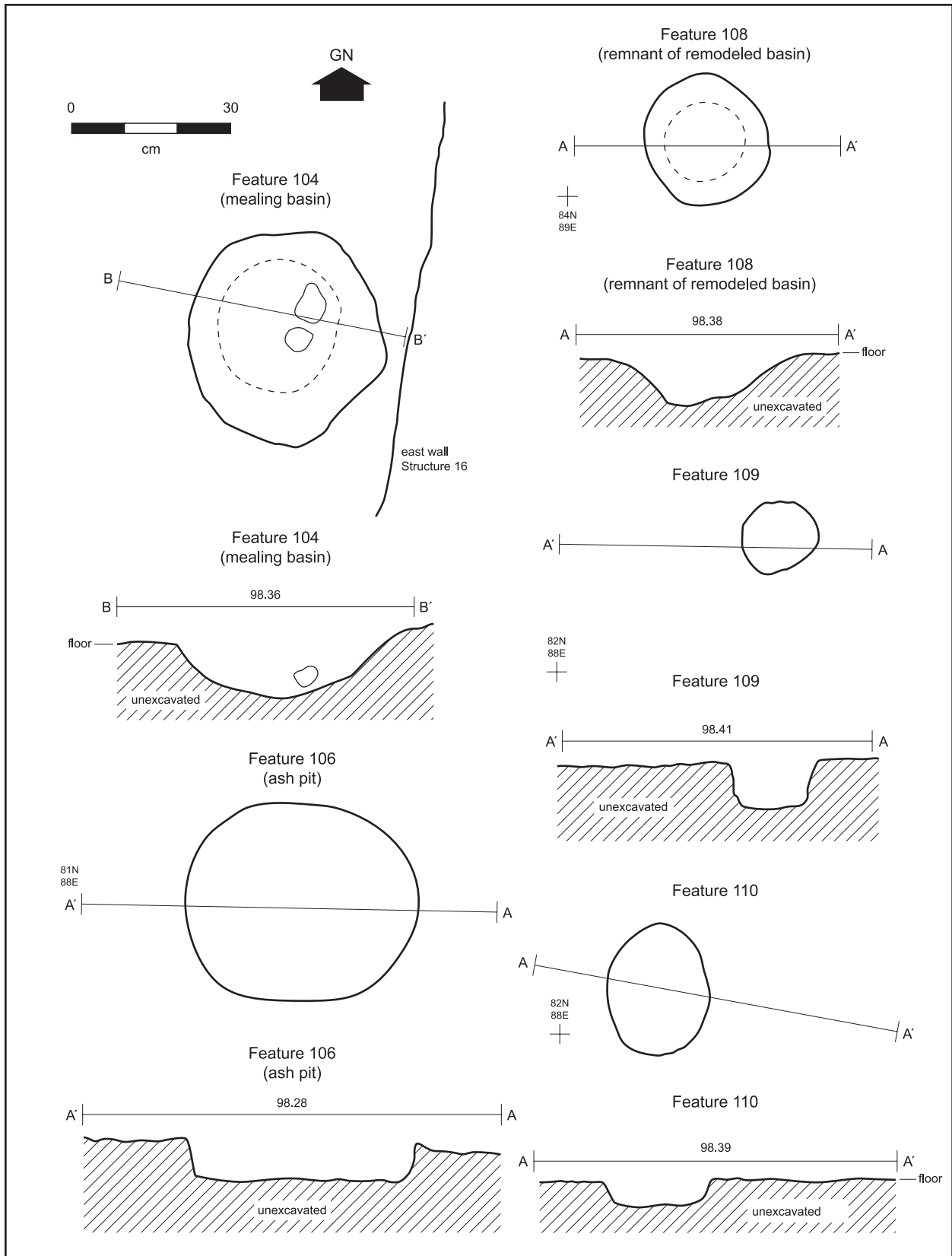


Figure 12.66. Features 105, 106, 107, 128, 130.



Figure 12.67. Feature 105.

Table 12.40. LA 6169, Structure 16 Floor Features, Seeds and Fruits (frequency per liter)

Feature	16	16	105	128	130
FS#	1306	1320			
<b>Cultural</b>					
<b>Annuals</b>					
<i>Chenopodium</i>	0.6	-	9.1	-	-
Cheno-am	0.6	-	1.9	-	-
<i>Portulaca</i>	-	-	-	0.7	-
Unidentifiable seed	-	-	1.1	-	-
<b>Grasses</b>					
Gramineae	-	-	0.4	-	-
<b>Cultivars</b>					
<i>Zea mays</i>	-	-	1.1	-	1
<b>Non-cultural</b>					
<b>Annuals</b>					
<i>Chenopodium</i>	5.9	0.6	1.5	1.3	-
<i>Euphorbia</i>	0.6	-	-	-	-
<i>Portulaca</i>	-	-	-	0.7	-
<b>Perennials</b>					
<i>Echinocereus</i>	-	-	0.4	-	-
<b>Grasses</b>					
<i>Sporobolus</i>	0.6	-	-	4.7	-



Table 12.41. LA 6169 Structure 16 Floor Features, Other Plant Parts, Abundance

Feature		16	16	105	130
FS#	Plant Part	1306	1320		
<b>Cultural</b>					
<b>Cultivars</b>					
<i>Zea mays</i>	Cupule	2	3	2	1

Table 12.42. LA 6169 Structure 16 Floor Features, Wood from Flotation Samples by Weight

Feature		16	16	105	128	130
FS#		1306	1320			
<b>Cultural</b>						
<b>Perennials</b>						
<i>Chrysothamnus</i>		-	.10g	-	-	-
<i>Juniperus</i>		.04g	.20g	.04g	.10g	.30g
<i>Pinus edulis</i>		.04g	-	-	-	-
Salicaceae		.04g	.10g	.10g	.04g	.04g
	( <i>Populus/Salix</i> )					
<i>Sarco/Atriplex</i>		.04g	.04g	1.00g	.04g	.30g

Table 12.43. LA 6169 Structure 16 Floor Features, Macrobotanical and C-14 Samples, Count and Weight

Feature		16	103	105	129	130
	Plant Part					
<b>Cultural</b>						
<b>Perennials</b>						
<i>Juniperus</i>	Wood	-	-	9/.71g	-	20/1.72g
Salicaceae ( <i>Populus/Salix</i> )	Wood	-	-	-	-	7/.47g
<i>Sarco/Atriplex</i>	Wood	-	-	41/2.40g	-	13/1.30g
Salicaceae ( <i>Populus/Salix</i> )	Wood	1/.40g	-	-	-	-
Non-coniferous wood	Wood	-	1/.04g	-	-	-
Unknown taxon	Bark	1/.30g	-	-	-	-
<b>Grasses</b>						
<i>Phragmites</i>	Stem	-	3/.20g	-	-	-
<b>Possibly cultural</b>						
<b>Perennials</b>						
Salicaceae ( <i>Populus/Salix</i> )	Wood	9/.14g	-	-	-	-
<b>Cultural</b>						
<i>Zea mays</i>	Cupule	16/.30g	-	-	-	-
	Cob	30/5.80g	-	-	1/.30g	-

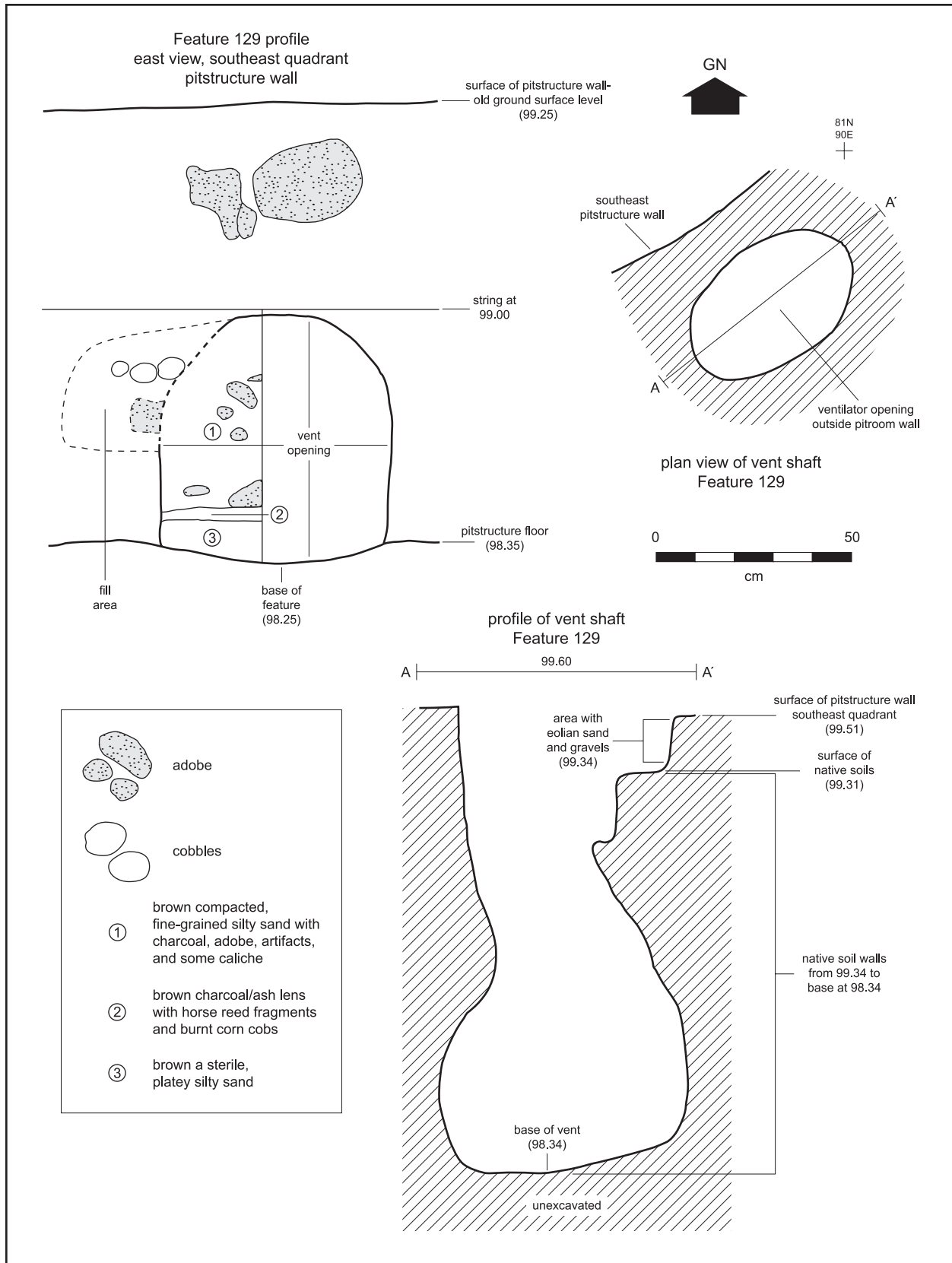


Figure 12.68. Structure 16, Feature 129, ventilator tunnel and shaft, plan and profile.

activities. Three multiplatform cores were also recovered, two were manufactured from non-vesicular igneous material and one was manufactured from chalcedony.

Unutilized flakes (71 percent) and unutilized small angular debris (n = 1) make up the majority of the assemblage. The tools recovered from the upper fill are manufactured from Jemez obsidian and nonvesicular igneous materials. The expedient tools consist of four utilized flakes and two marginally retouched flakes. With the exception of one flake, all exhibit unidirectional wear typical of scraping on bone or wood. Three of these tools were broken and did not exhibit complete functional edges. It is likely that these were broken during use and discarded. One tool exhibited bidirectional cutting wear on a concave edge. This tool may have been used to groove or cut around a cylindrical object, such as a handle or arrow shaft.

A complete andesite grinding slab, a fragment from a coarse-grained rhyolite mano, and a fragment from a vesicular rhyolite metate were also recovered from the upper fill.

The low number of animal bones included turkey and cottontail rabbit. One bone was burned and the majority were less than 50 percent complete, suggesting that they were a post-consumption sheet trash deposit associated with the short-term seasonal occupations.

Structure 16 contained a surprisingly high number of floor fill and floor contact debris and artifacts, considering its size and presumed seasonal occupation. Twenty-six artifacts were piece-plotted including nine sherds, two core/choppers, a hafted maul, a tested cobble, and twelve pieces of ground stone, including one fragment that was pigment stained.

A total of 130 sherds including Santa Fe and Galisteo Black-on-white pottery and plain and corrugated utility ware jar sherds were recovered from floor fill and floor (Table 12.21). No reconstructible vessels or fragments were recovered indicating the sherds are post-occupation deposition. Similar to the upper fill, the primary vessel forms were utility jars and

decorated bowls. Five Santa Fe Black-on-white jar body sherds were recovered representing a higher proportion of jars than is typical for the decorated pottery. Utility wares are tempered with equal proportions of local sandstone and Pajarito Plateau anthill sand.

One hundred and sixty lithic artifacts were recovered from the floor and the floor fill in Feature 16 (Table 12.37). The majority were chalcedony (55 percent) and nonvesicular igneous materials (33 percent). Other material categories were represented by few artifacts and include Jemez obsidian (n = 8), quartzite (n = 6), chert (n = 5), and nonvesicular igneous material (n = 1).

The assemblage reflects an emphasis on later stages of secondary core reduction. Eighty-nine percent of the whole flakes lack dorsal cortex and 72 percent of the platforms are single-faceted. Two flakes exhibited retouched platforms indicating bifacial tool manufacture. They were manufactured from chalcedony and nonvesicular igneous material. Two multiplatform cores, manufactured from the same materials, were also recovered.

Unutilized flakes (69 percent) and unutilized small angular debris (25 percent) compose the majority of the assemblage. One expedient flake tool, manufactured from Jemez obsidian, was recovered from the floor. It exhibits three utilized edges with unidirectional wear typical of scraping on hard media like bone or wood. A unifacial chopper, manufactured from quartzite, was also recovered.

The ground stone assemblage recovered from the floor is composed of a coarse-grained rhyolitic two-hand mano, an andesite grinding slab, a basalt axe, and a cobble with a pigment residue on a grinding surface. A fragment of a vesicular rhyolite indeterminate metate was also recovered.

Faunal assemblage included 44 animal bones (Table 12.38). Rabbits were the most common, with lesser frequencies of turkey, deer, and antelope. Only five of these bones were burned in contrast to the high frequency of burning found in Feature 130.

*Subsistence Activities.* Structure 16 housed

two occupations. The initial occupation included a thermal feature (Feature 130) and various small pits. The hearth and small pits may represent a seasonal residential suite of intramural facilities. Unfortunately, subsistence remains recovered from these features were minimal. Ethnobotanical analyses, including pollen and macrobotanical and flotation studies revealed little in the way of food or processing waste or discard. *Zea mays* and *Chenopodium* were recovered from Features 128 and 130 suggesting limited consumption of corn and gathered plants (Tables 12.40–12.43) (see Chapter 23). The low frequency of plant remains and the lack of fauna from the hearth suggest that processing, cooking, and consumption of most foods occurred outdoors or that meals required very limited preparation. This cannot be examined from the perspective of ceramics and lithic tools because this is the early occupation and the artifacts from the floor are most likely related to the later occupation. This low occurrence of subsistence remains is consistent with the other three pit rooms, which also yielded limited direct evidence of subsistence activities. This pattern seems to fit a small-scale biseasonal residential settlement pattern with occupation by one or two individuals.

The second occupation, already described, resulted in the remodeling of the pit room intramural features. The earlier hearth and pit features were decommissioned and a new hearth (Feature 105) was constructed along with three mealing bins. The construction of a bench occurred at this time as well, leaving little floor space for activities not related to food processing. The three mealing bins consistently yielded low concentrations of corn pollen along with a limited array of weedy annuals (see Chapter 24, R. Holloway). The obvious interpretation is that Structure 16 was reconfigured into a processing room with limited domestic activities besides plant processing. However, rabbit bones were recovered from the Feature 105 hearth suggesting field hunting and meat consumption in concert with grinding. Changes in floor features and the addition of the bench indicate that Structure 16 may

have functioned differently from the earlier occupation. A biseasonal occupation pattern may have been maintained, but it is possible that pit room use was more diurnal with fewer overnight stays. This might occur if the main residence or village was closer or the occupant was in some way prohibited from staying away from the village at night or for many nights.

*Abandonment.* Terminal use of Structure 16 was followed by a gradual collapse of the upper adobe walls and natural filling, resulting in consistent, but low frequencies of refuse from the upper to lower levels. Adobe clumps occurred throughout the structure fill and were not concentrated at any one location or elevation within the structure. The lack of trash-filling suggests that this portion of the site was abandoned with the end of the pit room use. Both Features 15 and 16 were abandoned in the same way. Structure 70 exhibited higher artifact content suggesting that it may have been partly or periodically trash-filled. The numerous ground stone fragments on the floor may remain from processing activities or accumulated from roof fall. A few large hand tools were left on the floor and may have been used in processing.

*Summary.* Structure 16 is an average-size pit room contiguous with the south wall of Structure 15, another pit room. Excavation revealed that Structure 16 had two distinct occupation episodes. The first episode was marked by the construction of the structure and an intramural hearth and small pits. This was primarily a domestic occupation indicative of a biseasonal residence pattern consistent with a fieldhouse and agricultural activities. Archaeomagnetic dating indicated the occupation occurred around AD 1220. This short-lived fieldhouse occupation was succeeded about twenty years later by a second more functionally specific occupation. The structure was remodeled with the construction of a new hearth, reorientation of the ventilator opening, construction of an adobe bench along the south wall, and construction of three adobe-collared mealing bins. Construction of these new fea-

tures virtually exhausted the floor space that was formerly available for sleeping and other domestic activities. Intramural space was dedicated to processing and limited cooking and food consumption. The absence of suitable floor space for sleeping is an indication that the structure's use was diurnal and the occupant returned to the village at night. This change in the occupation pattern suggests that there was a shift in some aspects of Coalition period agricultural production in the middle 1200s. This shift may reflect a change in the settlement pattern or residential village location with diurnal use feasible in terms of distance traveled between the village and fieldhouse and perhaps necessary depending on the social or age status of the individual or individuals that were regularly using the structure.

Structure 16 and the other pit rooms represent an assemblage of architectural features that can be compared with the other known Coalition and Classic period pit rooms in the Cochiti area. Clearly, pit rooms were part of a highly flexible settlement pattern and subsistence strategy that revolved around simple, small-scale house construction to achieve productive goals. Comparison of these structures and their intramural features and associated assemblages is undertaken in a later section of this report.

**Structure 70.** Structure 70 was a rectangular Coalition pit room located in Area 1, north of Structure 4, within Study Unit 10. It measured 3.0 m north-south by 2.75 m east-west by 1.13 m deep and was located in Grids 91-93N/89-91E (see Fig. 12.2). The upper 50 cm was moderately compacted sandy loam with cobbles and abundant artifacts reflecting intentional trash filling of the structure depression. This fill extends to the floor in the south half, but is interrupted by a 50-cm-thick layer of collapsed adobe in the north half. This suggests post-abandonment filling before the adobe superstructure collapsed. The floor and walls were unprepared, though compacted and smoothed.

Floor excavation revealed six intramural floor features, a ventilator shaft and opening,

and a human burial in the northeast corner. A lack of storage or processing features indicate use was mainly domestic and small scale. De facto refuse included low frequencies of sherds, chipped stone and ground stone, but also the partly articulated remains of a turkey. Deposition of the turkey results from terminal or post-occupation discard or the activity of a carnivore soon after the structure was abandoned.

Structure 70 was occupied during the early or middle Coalition period. Santa Fe Black-on-white pottery was recovered from upper and lower levels. A radiocarbon sample from the central hearth (Feature 98) yielded a cal AD 960 to 1250, two-sigma date range (Beta-140921). The late portion of the date range coincides with ceramic manufacture dates and is the best fit for an occupation date.

Abandonment was planned and the floor was mostly cleared of tools and containers. Refuse was discarded into the structure soon after abandonment. The burial of an adult human male was encountered above the structure floor indicating secondary use of the structure as a mortuary in addition to its use as a midden. The structure filled with adobe wall material and more refuse after the human interment. Obviously, the site continued to be occupied after the structure was abandoned suggesting that it could have pre-dated Structures 15 and 16.

*Excavation Strategy.* Initially Structure 70 was identified as a stratum break visible at the Strata 1 and 2 transition. The west half of the structure was systematically excavated to within 15 cm of the floor. The stratigraphy exposed in the east excavation wall was documented. The unexcavated half of the upper structure fill was removed to the floor fill level without screening. At the floor fill level, the structure was divided into quadrants. The fill was removed and screened through 1/8 inch mesh. Artifact and feature recording and sample collection followed standard procedures. Only one-half of the ventilator shaft and tunnel were excavated and screened. Ventilator morphology was similar to Features 15 and 16. A

50 percent sample of the ventilator fill artifacts, which were in redeposited fill, was judged representative.

*Stratigraphy.* Five stratigraphic layers were evident in Structure 70 (Fig. 12.69). These layers provide limited evidence of pit room wall construction, evidence of abandonment behavior, and post-abandonment site activities. Table 12.44 provides a description of the five stratigraphic layers.

In general, Structure 70 was different from Structures 10, 15, and 16 because it had evidence of trash filling in combination with staged collapse of the superstructure. The dec-

orated pottery recovered indicates the filling episodes occurred during the Coalition period. The surface structure and the pit rooms dated to the Coalition period suggesting that Structure 70 may have been one of the first pit rooms occupied in Study Units 1 and 10. Structure 10 is south of this structure cluster and is architecturally different and undoubtedly was from a different Coalition period occupation. Trash-filling occurred while the structure was only partly filled. The upper 50 cm of Stratum 1 was a natural deposit indicating trash-filling was discontinued before the pit room was completely filled.

Table 12.44. LA 6169, Feature 70, Stratigraphic Descriptions

Designation	Description	Munsell Color Range	Comments
I	Eolian, sandy loam; 34 to 60 cm thick	Brown (7.5 YR, 5/3, dry)	Stratum 1 was slightly charcoal-infused with 1 to 2 percent gravel-size clastic inclusions. It exhibited was non-plastic when moistened with a weak, blocky structure, and a wavy boundary. Artifact counts reflect natural filling of the upper portion of the pit room.
II	Sandy loam mixed with adobe 20 to 60 cm thick	Light yellowish brown; 10YR 6/4 (dry)	This stratum was a combination of adobe wall collapse and low intensity trash-filling. The adobe wall collapse indicates that there was a puddle adobe superstructure that eventually melted in the pit room. Trash filling is reflected by the high frequency of Santa Fe Black-on-white and corrugated gray utility wares, when compared with Features 15 and 16.
III	Sandy loam mixed with ash and charcoal; 2 to 8 cm thick	Light brownish gray; 10YR 6/2 (dry)	This stratum was thin ash and charcoal lense restricted to the south half of the pit room at 24 to 30 cm above the floor. It may remain from an isolated hearth cleaning episode. The ash and charcoal are embedded within Stratum II.
IV	Fine eolian sand; 5 to 10 cm thick	Yellowish brown; 10YR 5/4 (dry)	This was a thin layer of wind blown sand that covered the floor immediately following abandonment. It is evidence that the structure was covered and partly roofed immediately following abandonment.
V	Fine sandy loam with occasional cobbles; 20 to 50 cm thick	Light yellowish brown (10YR 6/4, dry)	This layer reflects a combination of roof closing material and natural fill deposited after the structure was abandoned, but part of the adobe superstructure remained. It had moderately low to medium artifact counts suggesting that limited trash filling may have occurred.

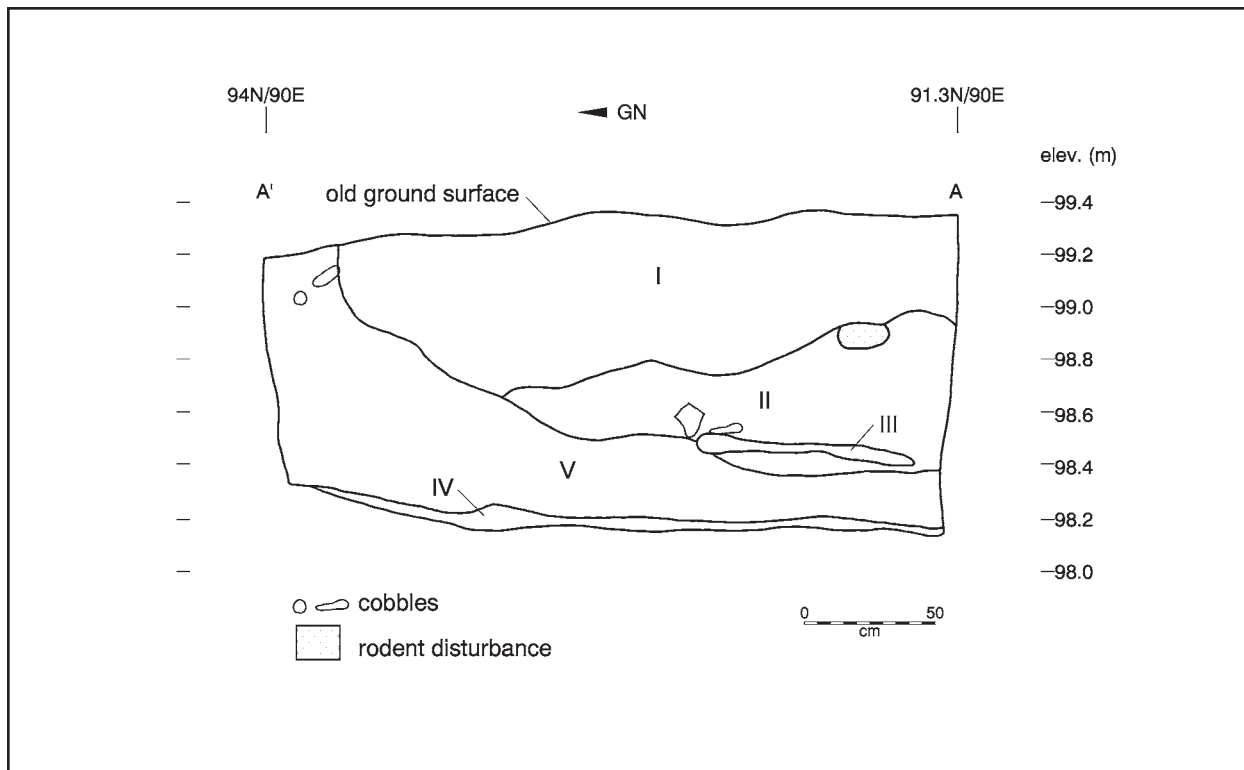


Figure 12.69. Structure 70, stratigraphic profile.

Structure 70 upper fill was different from the other pit rooms in the abundant ceramics and turkey bones that were recovered (Tables 12.21, 12.45, and 12.46). More than 600 sherds and 270 animal bones, of which 129 were turkey, suggest intentional trash-filling following abandonment. Santa Fe Black-on-white pottery predominates the decorated ceramics. Middle Rio Grande utility ware is the main gray ware, although 43 sherds of Northern Rio Grande utility ware were recovered. The presence of Northern Rio Grande utility ware, which is more prevalent in the preceding Late Developmental period, suggests that the structure was abandoned and filled early in the Coalition period. This agrees with the observation that the site continued to be occupied after the structure was abandoned.

*Description.* Structure 70 was a deep, sub-rectangular, Coalition period pit room located 6 m north of Structures 15 and 16. The pit room measured 3.0 m north-south by 2.75 m east to west by 1.18 m deep (Figures 12.70 and 12.71). The estimated floor area was 8.25 sq m making it the largest of the pit rooms. Floor excavation

revealed intramural features that included a hearth (Feature 98) and ash pit (Feature 122), an east ventilator opening and shaft, a pit, and three small divots (Fig.12.70). Feature 95, a human burial, was laid on a clean sand platform above the pit room floor. This suggested that the interment occurred after structure abandonment. The interrupted characteristic of Stratum II suggests that the interment occurred after the roof and walls had collapsed and most of the trash filling had occurred.

*Construction.* Excavation of Structure 70 yielded limited evidence of construction methods. Floors and remaining walls used native soil. No postholes were found.

Structure 70's lower walls were excavated into the native soil incorporating Stratum 2. The existing walls ranged from 0.77 to 1.18 m high. The walls are vertical to incurving (Fig. 12.114). In Structure 16 it appeared that the incurving profile was created to accommodate remodeling or to allow the wall to be stabilized with adobe, whereas in Structure 70 there was no evidence of an adobe façade on the walls. The walls may have been smoothed but there

Table 12.45. LA 6169, Structure 70, Upper Fill and Floor Fill and Floor, Chipped and Ground Stone Artifact Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other" Local			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	45	61.6	3	4.1	-	-	7	9.5	18	2.5	-	-	73	17.9
Flake	169	56.3	14	4.6	3	0.1	18	6.0	96	32.0	-	-	300	73.8
Flake, Bifacial Thin	3	100.0	-	-	-	-	-	-	-	-	-	-	3	0.7
Flake, Sharpening	-	-	-	-	-	-	1	100.0	-	-	-	-	1	0.2
Tested Rock	2	100.0	-	-	-	-	-	-	-	-	-	-	2	0.4
Core, Multiplatform	4	44.4	-	-	-	-	-	-	5	55.5	-	-	9	2.2
Core, Single Platform	-	-	1	100.0	-	-	-	-	-	-	-	-	1	0.2
Utilized Core Frag	-	-	-	-	-	-	-	-	2	100.0	-	-	2	0.4
Angular Debris, Utilized	-	-	-	-	-	-	1	100.0	-	-	-	-	1	0.2
Flake, Utilized	-	-	-	-	-	-	1	33.3	2	66.6	-	-	3	0.7
Flake, Marg Retouch	-	-	-	-	-	-	2	66.7	1	33.3	-	-	3	0.7
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	1	0.2
Biface	-	-	-	-	-	-	-	-	-	-	1	100.0	1	0.2
Uniface	2	100.0	-	-	-	-	-	-	-	-	-	-	2	0.4
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.2
Grinding slab	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.2
Shaped Stone	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.2
Mano, Two hand	-	-	-	-	-	-	-	-	-	-	1	100.0	1	0.2
<b>Total</b>	<b>225</b>	<b>55.4</b>	<b>18</b>	<b>4.4</b>	<b>3</b>	<b>0.7</b>	<b>31</b>	<b>7.6</b>	<b>127</b>	<b>31.2</b>	<b>2</b>	<b>0.4</b>	<b>406</b>	<b>100.0</b>

was no formal preparation or plastering evidence. The floor sloped up to meet the walls. The 1.18 m maximum remaining wall height indicates that a 40 to 60-cm-high superstructure may have existed. Adobe found in Stratum II may be the remnant of a puddled adobe upper wall. No postholes were found in the floor or around the structure perimeter.

No evidence of the roof, except for the sandy loam in Stratum II, was encountered. Logically, if the structure walls were built to a height that accommodated a standing person, then the roof could have been laid flat between the walls. The function of the small number of cobbles found above the room floor could not be determined, but some of the rock may have been placed on the roof to stabilize the roofing material.

The structure floor was packed and smoothed. It was in good condition and was finished prior to the construction of the hearth. The well-defined hearth and ash pit complex combined with the few floor features indicate that Structure 70 may have been used for sleeping and shelter rather than processing and storage.

*Features.* Six floor features included the central hearth (Feature 98) and ash pit (Feature

122) and four small divots of pits (Features 99, 100, 101, and 125) (Table 12.47). Feature 97, the ventilator opening and shaft, was the only wall feature.

The central hearth and ash pit were well-made and formal (Fig. 12.72). The hearth (Feature 98) had a burned and oxidized adobe collar. The collar ranged from 4 to 10 cm wide and 3 to 6 cm high. The collar separated the ash pit from the hearth. The hearth contained two fill layers. The upper stratum was a 10YR 3/3 dark yellow brown sandy loam with a few charcoal flecks. The stratum was 8 to 14 cm thick. The lower stratum contained ash and charcoal and was a mixed primary and secondary deposit. Charcoal collected from this 6- to 10-cm-thick stratum was radiometrically dated to cal AD 910 to 920 and cal AD 960 to 1250 (two-sigma date range; Beta-149021). This broad date range does not refine the AD 1200 to 1325 range suggested by the pottery manufacture dates. A flotation sample yielded no charred cultigens or economic wild plant species.

The ash pit was east of the hearth and between the hearth and the ventilator opening in the east wall. The ash pit was not collared and only contained a mix of redeposited sand.



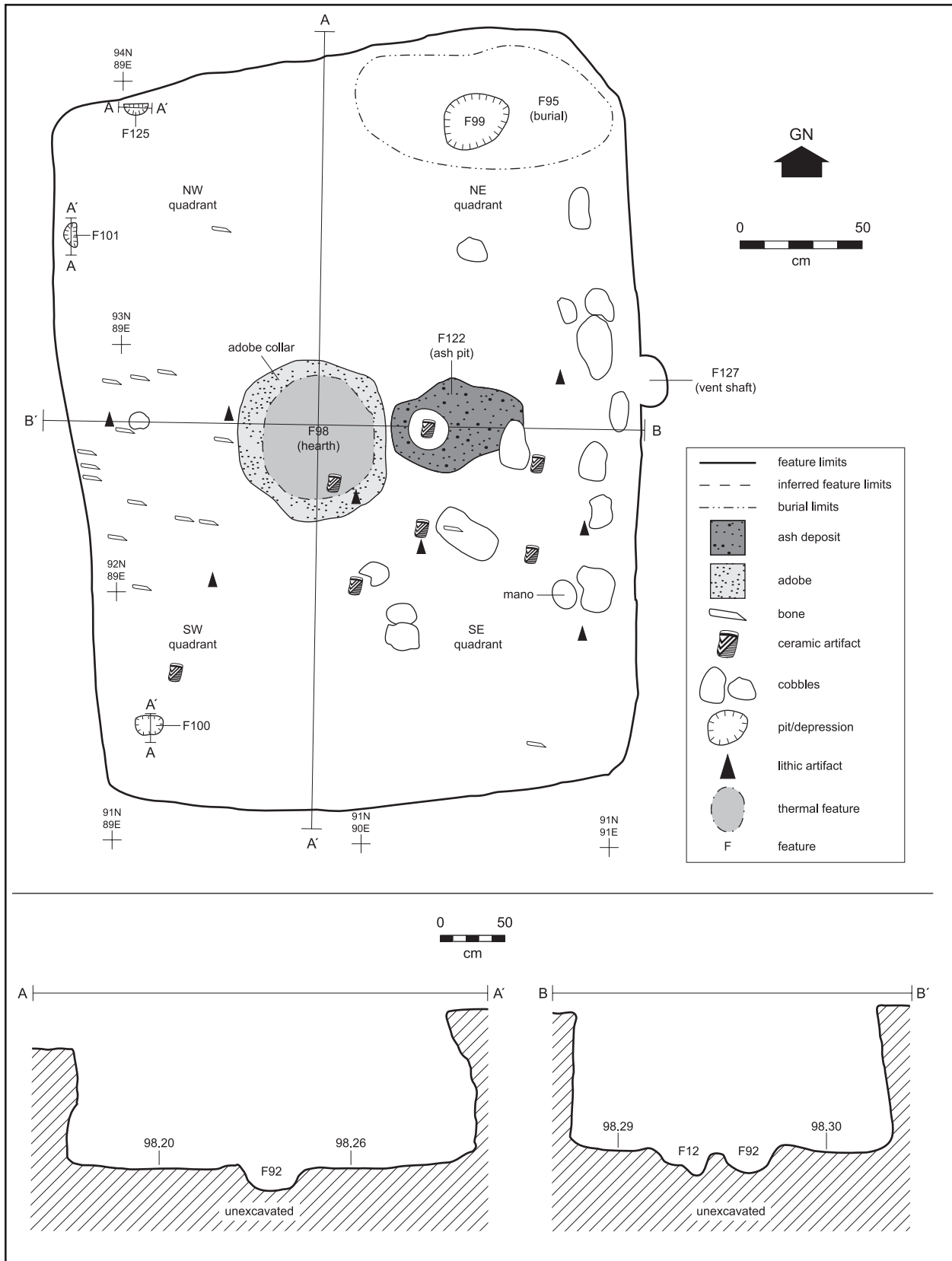


Figure 12.70. Structure 70, plan and profile.



Figure 12.71. Structure 70.

No cultural material was recovered from the ash pit. East or southeast ventilator orientation for the pit rooms was typical for LA 6169 and for the other Cochiti area pit rooms (Lange 1968).

The four small undifferentiated pits or divots were located along the west wall and in the northeast corner (Fig. 12.70, Table 12.47). The smallest pits may have supported frames for drying racks or a flimsy superstructure. Small pits are typical in structures from all periods, but are difficult to interpret (Fig. 12.72).

The ventilator (Feature 97) was excavated into the wall and corner of the pit room. The opening is vaulted. The shaft is separated from the inner wall by 20 cm of Stratum 2 (Fig. 12.73). The shaft contained cobbles and adobe chunks suggesting that it may have been adobe-lined or that the shaft was filled with adobe from a dismantled upper structure wall. Three Middle Rio Grande utility ware sherds were recovered. The low frequency of artifacts suggests that the ventilator shaft filled naturally.

Interred in the northeast corner was a

adult human burial (Feature 95). The skeletal remains were of a 45+ year-old male placed on the pit room floor and covered with roof and wall fall. The head was oriented to the east. The vertebra were disarticulated by rodent activity. There was no evidence of a burial pit nor were there associated burial items. A pit or evidence of post-abandonment interment was not observed during excavation, suggesting that the burial occurred shortly after abandonment. The burial is described in more detail in Chapter 24.

*Artifact Assemblage.* Structure 70 was the only pit room that was partly trash-filled. This trash-filling is evidenced by the higher artifact frequencies that were recovered. Half of the upper fill was screened and included in the artifact analysis. All of the floor and floor fill artifacts were included.

Pottery from the upper fill totaled 618 sherds. The assemblage was dominated by Middle Rio Grande Plain and corrugated utility pottery types and Santa Fe Black-on-white. Santa Fe Black-on-white occurred mainly as

Table 12.46. LA 6169, Structure 70, Fauna Summary

	Upper Fill		Floor Fill and Floor		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/medium-large bird	9	3.3%	1	2.5%	10	3.2%
Small mammal	47	17.4%	4	10.0%	51	16.5%
Small-medium mammal	4	1.5%	-	-	4	1.3%
Medium mammal	1	0.4%	-	-	1	0.3%
Medium-large mammal	2	0.7%	4	10.0%	6	1.9%
Large mammal	7	2.6%	1	2.5%	8	2.6%
Black-tailed prairie dog	-	-	1	2.5%	1	0.3%
Gunnison's prairie dog	3	1.1%	1	2.5%	4	1.3%
Yellow-faced pocket gopher	2	0.7%	7*	17.5%	9	2.9%
Ord's kangaroo rat	1	0.4%	-	-	1	0.3%
Medium to large rodent	-	-	2	5.0%	2	0.6%
Desert cottontail	37	13.7%	2	5.0%	39	12.6%
Black-tailed jackrabbit	17	6.3%	2	5.0%	19	6.1%
Medium artiodactyl	2	0.7%	3	7.5%	5	1.6%
Pronghorn	-	-	1	2.5%	1	0.3%
Bighorn sheep	-	-	1	2.5%	1	0.3%
Medium bird	1	0.4%	-	-	1	0.3%
Large bird	16	5.9%	2	5.0%	18	5.8%
cf. Sharp shinned hawk	1	0.4%	-	-	1	0.3%
Golden eagle	1	0.4%	-	-	1	0.3%
Turkey	119	44.1%	8	20.0%	127	41.0%
Total	270	100.0%	40	100.0%	310	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Light to heavy	1	0.4%	-	-	1	0.3%
Heavy or black	9	3.3%	2	5.0%	11	3.5%
Heavy to calcined	12	4.4%	-	-	12	3.9%
Calcined	40	14.8%	1	2.5%	41	13.2%
Complete	58	21.5%	11	27.5%	69	22.3%
>75% complete	4	1.5%	-	-	4	1.3%
50-75% complete	17	6.3%	2	5.0%	19	6.1%
25-50% complete	65	24.1%	7	17.5%	72	23.2%
<25% complete	126	46.7%	20	50.0%	146	47.1%

\* indicates a partial skeleton counted as one specimen

Table 12.47. LA 6169, Structure 70, Feature Data

Feature No.	Description	Dimensions		Fill	Comments
		(cm)			
95	Human burial lying on floor fill	N/A			Located in the northwest corner
97	Ventilator tunnel and shaft			Stratum II	Located in the east wall
98	Adobe-collared central hearth	72 X 60 X 22		See text	Evidence of one remodeling episode
99	Undifferentiated pit	27 X 24 X 9		Strata II and IV	
100	Undifferentiated pit	16 X 12 X 4		Strata II and IV	
101	Undifferentiated pit	16 X 12 X 8		Strata II and IV	
122	Ash pit	38 X 37 X 23		Strata II and IV	Associated with Feature 98
125	Undifferentiated pit	22 X 19 X 8		Strata II and IV	

bowl sherds, although there were a few can-teen and seed jar sherds identified reflecting the full range of domestic forms from a residential refuse deposit. Unlike the upper fill contexts of the other pit rooms, Structure 70 had a small percentage of Northern Rio Grande plain and corrugated that suggest a transition in utility ware acquisition from northern to local and Pajarito Plateau sources from Late Developmental to Coalition period. Otherwise the majority of the utility ware jars were tempered with rock from local and Pajarito Plateau sources. Unlike other Coalition period assemblages, Pajarito Plateau tempered sherds were dominant. Utility jars were the dominant vessel form and with a small number of sherds exhibiting interior cooking wear suggesting storage as their main function. Also, twelve sherds exhibited drill holes suggesting use of partial or repaired vessels by site residents.

Three hundred and fifty-three lithic artifacts were recovered from the upper fill in Structure 70. The majority consists of chalcedony (56 percent) and nonvesicular igneous materials (31 percent). Lower frequencies of Jemez obsidian ( $n = 30$ ), chert ( $n = 15$ ), quartzite ( $n = 2$ ), and "other" local material ( $n = 1$ ) were also recovered.

The general lithic assemblage indicates an emphasis on later stages of secondary core reduction; 83 percent of whole flakes lacked dorsal cortex. Seventy-eight percent of all platforms are single faceted. Although some flakes exhibit 100 percent dorsal cortex, with the exception of Jemez obsidian, the proportion of these to non-cortical flakes is small. All stages of core reduction and a formal tool are represented within the obsidian material category. Bifacial tool manufacture is also indicated within the chalcedony material category by two flakes with retouched platforms. Multiplatform cores were manufactured from chalcedony ( $n = 4$ ) and nonvesicular igneous materials ( $n = 5$ ). A chert single-platform core and two utilized core fragments manufactured from nonvesicular igneous material were also recovered.

Unutilized flakes (72 percent) and unuti-

lized small angular debris (31 percent) make up the majority of the assemblage. The upper fill also contained a number of expedient and formal tools. The assemblage consisted of two utilized flakes, one manufactured from obsidian and the other from nonvesicular igneous material, and a utilized piece of small angular debris manufactured from obsidian. These tools exhibit both unidirectional scraping wear and battering. The unidirectional scraping wear is typical of use on hard media like bone or wood. It is unclear what activity resulted in the battering wear. Three flakes exhibit marginal retouch but two, manufactured from obsidian, lack complete functional edges. It is likely these tools were discarded prior to use. The third marginally retouched flake, manufactured from nonvesicular igneous material, exhibits a complete functional edge yet lacks evidence of utilization using 60x magnification. It is likely that this tool was used but wear patterns are not visible using this magnification. Two core fragments exhibited unidirectional wear similar to wear patterns resulting from scraping on hard media like bone and wood. Formal tools included two unifaces manufactured from chalcedony and one biface manufactured from obsidian. The unifaces lacked evidence of use and did not exhibit a functionally complete edge. It is likely that these artifacts were discarded prior to use. The biface fragment exhibits unidirectional wear on a functionally complete edge. It is likely that the tool was used as a scraper after the biface broke.

Three ground stone artifacts, all made of fine-grained rhyolite, were recovered from the upper fill in the structure. A complete grinding slab, a fragment of a shaped slab, and an indeterminate ground stone fragment were recovered.

The fauna represent an interesting change from the other pit rooms. Turkey dominates, but it may not have been consumed, as indicated by burning and butchering patterns. The high number of turkey bones may represent fewer than five specimens. Two raptor bones were recovered, which are rare for the project. Medium and large mammal occur in very low

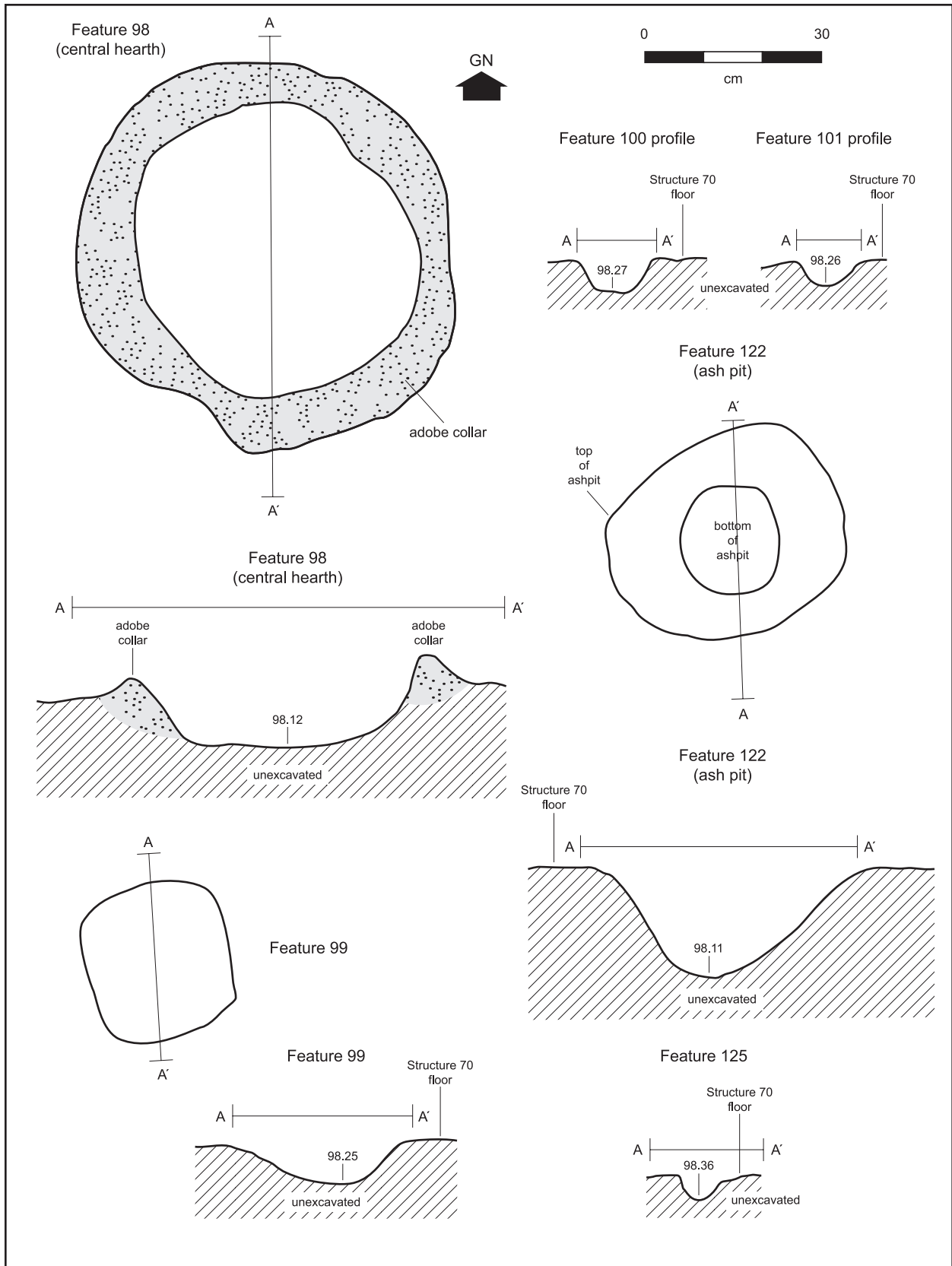


Figure 12.72. Features 98, 99, 100, 101, 122, 125.

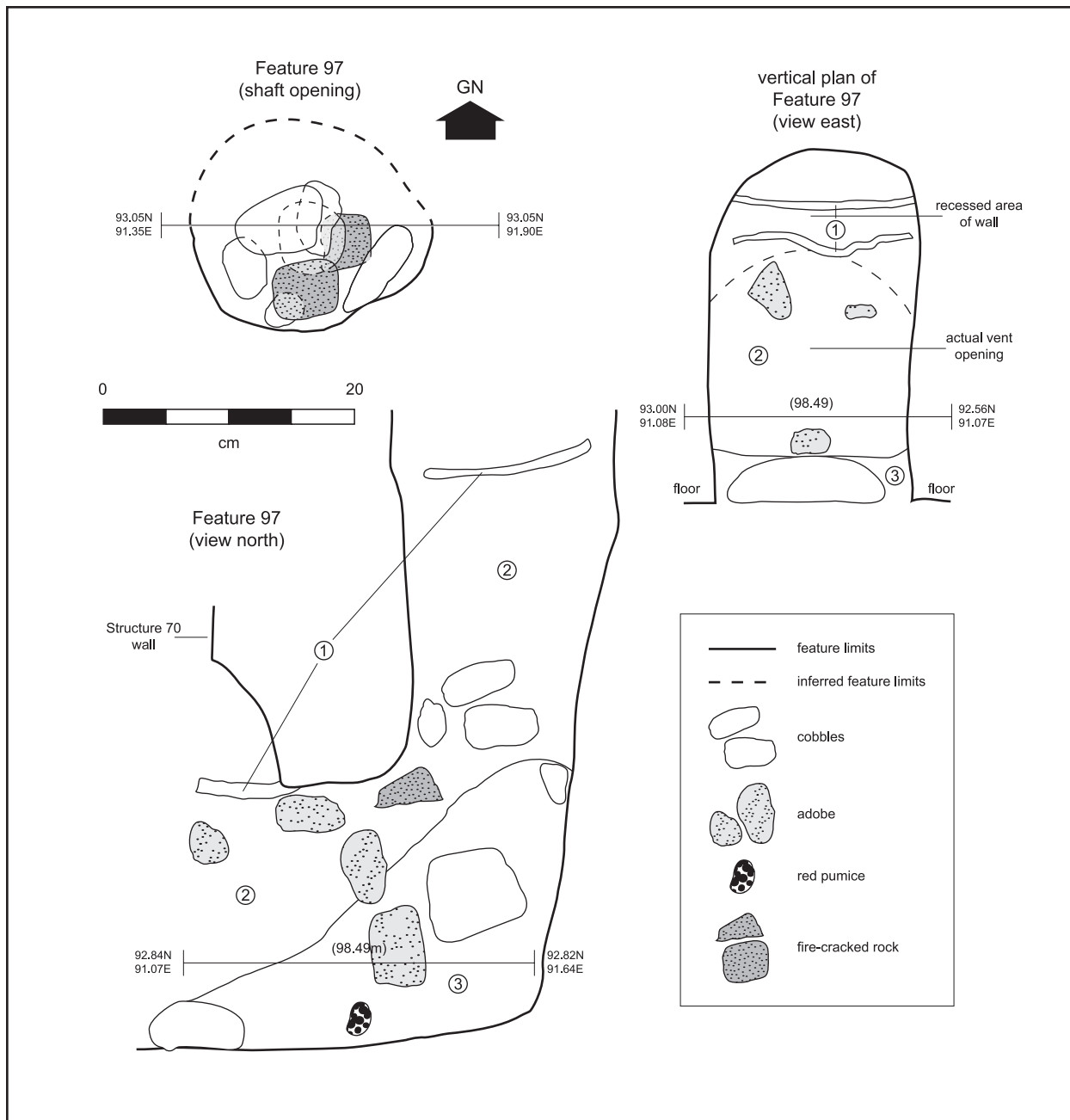


Figure 12.73. Structure 70, Feature 97, plan and profile.

frequencies. An unusually high proportion of the bone is burned and fragmentary suggesting hearth cleaning and post-consumption burning. These patterns are consistent with residential midden deposits.

Structure 70 floor and floor fill deposits yielded 83 ceramics, 52 pieces of chipped stone, a two-hand mano, and 70 pieces of animal bone. Floor and floor fill artifact frequencies are provided in Tables 12.21, 12.45 and 12.46.

Of these, 47 artifacts came from the floor and included a disarticulated turkey skeleton, a bone awl, a worked sherd, 7 sherds, and 11 chipped stone artifacts. The bone awl and worked sherd may be tools associated with pit room activities. The remaining artifacts may remain from low intensity trash filling immediately following structure abandonment.

The ceramic types represented by the 83 sherds recovered from floor and floor fill con-

texts occurred in similar percentages to the upper fill, except for slightly higher percentages of Santa Fe Black-on-white and Northern Rio Grande utility ware and a lower percentage of Middle Rio Grande utility ware. The overall low frequency of floor and floor fill sherds makes this difference in proportions difficult to interpret. It could be due to sampling biases caused by cluster effects or it could reflect function and temporal differences in the two assemblages. Santa Fe Black-on-white is the main decorated type indicating a Coalition period occupation.

Fifty-three lithic artifacts were recovered from the floor fill and floor in Structure 70 (Table 12.45). The majority were manufactured from chalcedony (53 percent) and nonvesicular igneous materials (36 percent). Chert, quartzite, obsidian, and "other" igneous material categories were each represented by a single artifact.

The assemblage indicates an emphasis on later stages of secondary core reduction. Eighty-two percent of the whole flakes lack dorsal cortex and 80 percent of the flakes with platforms are single-faceted. A single bifacial thinning flake manufactured from chalcedony indicates that bifacial tool manufacture occurred in the structure.

Unutilized flakes (83 percent) and unutilized small angular debris (11 percent) compose the majority of the assemblage. A single flake tool was recovered from the floor. It was manufactured from nonvesicular igneous material and exhibited battering wear along a 4-cm-long edge. It is unclear how this tool was used.

A two-hand mano manufactured of "other" igneous material was also recovered from the floor in the structure.

Fauna from floor and floor fill deposits are dominated by small mammal and turkey. The predominant identified species was yellow-faced pocket gopher, which was represented by 25 bones from four individuals. More than half of the yellow-faced pocket gopher bones were associated with the Feature 95, an adult male. Based on the association between the yellow-faced pocket gopher and the burial, it

appears that the gopher may have been from fill used to fill the burial pit rather than associated with the structure occupation or they may represent post-interment rodent activity. Treating the gopher bones as intrusive makes the Structure 70 floor and floor fill assemblage more similar to other Coalition period structures with a predominance of rabbit and turkey and low frequencies of artiodactyl or large mammal.

*Subsistence Activities.* Structure 70 was a seasonally used field structure or residence. Hearth remodeling suggests that it was occupied for at least two seasons before abandonment. Ethnobotanical analyses, including pollen, macrobotanical, and flotation studies, revealed little in the way of food or processing waste or discard. *Zea mays* pollen was recovered from the floor suggesting limited corn consumption or storage (see Chapter 24, R. Holloway).

Ethnobotanical remains are diverse, reflecting plant gathering and processing within field and disturbed settings, and the riparian environment. Ricegrass is a spring plant suggesting a growing season occupation (see Chapter 23, McBride and Toll). Faunal remains that can be directly attributed to the pit room occupation are sparse. The turkey on the floor was probably not consumed, indicating that they were kept at seasonal residences. The animal bone from floor fill and upper strata reflect typical rabbit-dominated subsistence with burned bone, indicating the deposits are refuse. The turkey body parts suggest that parts of whole skeletons were discarded with minimal evidence of burning. This indicates that the turkeys were kept, but not consumed. The lithic assemblage is characteristic of core reduction and very limited tool production, such as would be expected for small-scale, seasonal subsistence activities.

*Abandonment.* Terminal use of Structure 70 was followed by the interment of the adult male skeleton in the northeast corner (Feature 95). Burial was followed by sporadic trash-filling of moderate intensity. Structure 70 fill had the highest frequency of artifacts for all four

Coalition period pit rooms. The presence of Northern Rio Grande Plain and corrugated pottery in higher frequencies than were found in the other pit rooms suggests that Structure 70 was one of the early pit rooms. This coincides with the relatively heavy trash-filling, which indicates the site remained occupied or was subsequently occupied following abandonment. Adobe mixed with colluvial and eolian fill suggest structure collapse and filling were relatively gradual and interspersed with trash-filling episodes.

*Summary.* Structure 70 was the largest pit room from the Coalition period component. It is isolated from the other pit rooms and is separated from Structures 15 and 16 by the Early Developmental Structure 4. Ceramics and radiocarbon-dating suggest an early to mid AD 1200s occupation. A single intramural hearth and the small intramural pits suggest limited domestic activity with floor space left open for sleeping. A wide range of ethnobotanical remains suggest a broad-based field and riparian gathering strategy, such as might support a seasonal occupation by one or two individuals. The other pit rooms had less evidence of broad-based foraging, which might indicate that they were not occupied during the full growing season. If Structure 70 was an early Coalition period seasonal structure, differences in its subsistence remains might reflect changing land use and residential patterns from the Late Developmental to the Coalition period. The east orientation for the ventilator is consistent with Structure 15, and perhaps the early occupation of Structure 16. No ventilator was identified for Structure 10, although the east wall was removed by mechanical excavation. Structure 70 is consistent with other early to middle Coalition pit rooms in size, intramural features, and construction. It is part of a well-established and widely-used seasonal residence strategy found in White Rock Canyon and in the Cochiti Dam and Reservoir area.

**Structure 12.** Structure 12 was the ephemeral and poorly preserved remains of a surface room foundation located along the west edge

of the right-of-way in Area 1. This may be a remnant of the surface room block reported by Eddy and Dittert (1961) and Peckham and Wells (1967) and redescribed as a possible cobble-bordered grid garden in the data recovery plan (Ware 1997). Extensive excavation revealed no evidence of a cobble-bordered grid garden. Instead, melted adobe blocks and a discontinuous alignment of cobbles and adobe remained from a structure foundation.

Structure 12, as defined by its partial excavation, was 2 m north-south by 2.0 m east-west with a 20-cm-high wall remnant. The rectangular room is in Area 1, southwest of Structure 4 within Study Unit 4. It was located in Grids 81-84N/84-85E. The structure was heavily reduced by deflation and wind erosion. The structure lacked a stratigraphic sequence and the floor could not be defined. Upright cobbles embedded in adobe were the main indicator of the former structure outline. There were no intramural features defined. Artifacts and specimens recovered from within the feature limit are expected to relate to post-occupation activities and processes rather than activities that occurred within the structure.

Information on structure abandonment is limited because so little of the structure remained. It is likely that abandonment was planned and was followed by the gradual degradation and collapse of the structure.

*Excavation Strategy.* The possible structure area was defined by the distribution of surface cobbles at the right-of-way limit. The area around and incorporating the cobble cluster was excavated in two 10-cm levels. The soil within these levels exhibited characteristics of wall fall mixed with naturally deposited eolian and colluvial sandy loam. All cobbles were left in place in order to track possible wall alignments. The best wall remnant was a cobble alignment that formed the north wall foundation and the east wall which was a combination of cobbles and adobe melt. Excavation continued until the bottom of the adobe was encountered. This was used as the floor indicator, since the original floor was no longer obvious. No floor contact artifacts or floor features were



encountered. The lower structure fill was screened with 1/8 inch mesh.

*Stratigraphy.* Two stratigraphic layers were defined within the structure limit. A mixed cultural and natural level was similar to site Stratum 1. The second layer, Stratum I consisted of Stratum 1 mixed with cobbles and adobe melt remaining from structure disintegration and collapse.

The Stratum 1 layer was 10- to 15-cm thick and consisted of loosely consolidated eolian and colluvial sandy loam. Artifact frequency in this layer was relatively high with almost 500 artifacts recovered.

The Stratum I layer was 12- to 15-cm thick and consisted of moderately to well-consolidated Stratum 1 mixed with compact and fine-grained clay loam adobe and an occasional fleck of charcoal. Artifact counts dropped considerably to less than 150 recovered. The adobe occurred as clumps and clods, which was consistent with puddled adobe construction.

*Description.* Based on the excavation results, Structure 12 is a surface room constructed of adobe and cobbles. Only a small part of the structure was represented by a low cobble and adobe foundation (Figs. 12.74, 12.75). The foundation remnant includes the northeast and southeast corners comprising all of the west wall and an incomplete segment of the north wall. The room remnant is 2.0 m north-south, which is a complete dimension, and 2.00 m east-west, which is an incomplete dimension. The wall is interrupted by the edge of the west right-of-way. The adobe and cobble foundation remnant is 16 cm high and 30 cm thick.

*Construction.* The room was constructed of puddled adobe and river cobbles. The cobbles are embedded in the adobe one to two tiers wide. Some cobbles are upright with capping cobbles laid across the breadth of the wall forming a platform for the next course of puddled adobe. There is no evidence of wall plastering or formal floor preparation. No post-holes were found and there was no other evidence of roof construction. It is assumed that the walls were adobe and cobble from floor to roof, though a large number of cobbles were

not exposed by excavation. This suggests that the main component of the wall construction was adobe. This construction is similar to room construction described for the North Bank site excavated during the first Cochiti Dam project (Lange 1968a; Bussey 1968).

*Artifact Assemblage.* Excavation within and around Structure 12 recovered artifacts representing a sheet trash deposit mainly from the Coalition period. Excavation recovered 206 sherds (Table 12.21), 149 chipped and ground stone artifacts, and two animal bones.

The 206 sherds are predominantly Santa Fe Black-on-white for the decorated pottery and Middle Rio Grande Plain and Corrugated for the utility wares. Santa Fe Black-on-white occurred as bowl body and rim sherds with undifferentiated unpainted white ware occurring as eight jar sherds. The Middle Rio Grande utility pottery occurred with roughly equivalent proportions of local sand and Pajarito Plateau anthill sand temper. This is the typical pattern for Coalition period utility ware assemblages for this site. Ten utility ware sherds exhibit interior wear from cooking indicating that the sheet trash deposit had a domestic component.

One hundred and forty-nine lithic artifacts were recovered from a possible surface room and extramural area. Most materials were manufactured from nonvesicular igneous materials (44 percent), chert (31 percent), and chalcedony (31 percent). Lower frequencies of Jemez obsidian (n = 9), quartzite (n = 2), and "other" local (n = 1) were recovered

The lithic assemblage indicates an emphasis on later stages of secondary core reduction with 86 percent of the whole flakes lacking dorsal cortex. Most platforms were either single-faceted (69 percent) or collapsed (19 percent). Three obsidian flakes with retouched platforms indicate evidence of formal tool manufacture. A bifacial core manufactured from nonvesicular igneous materials and a multi-platform core manufactured from chert were recovered, as well as an obsidian utilized core fragment.

Unutilized flakes (59 percent) and unuti-

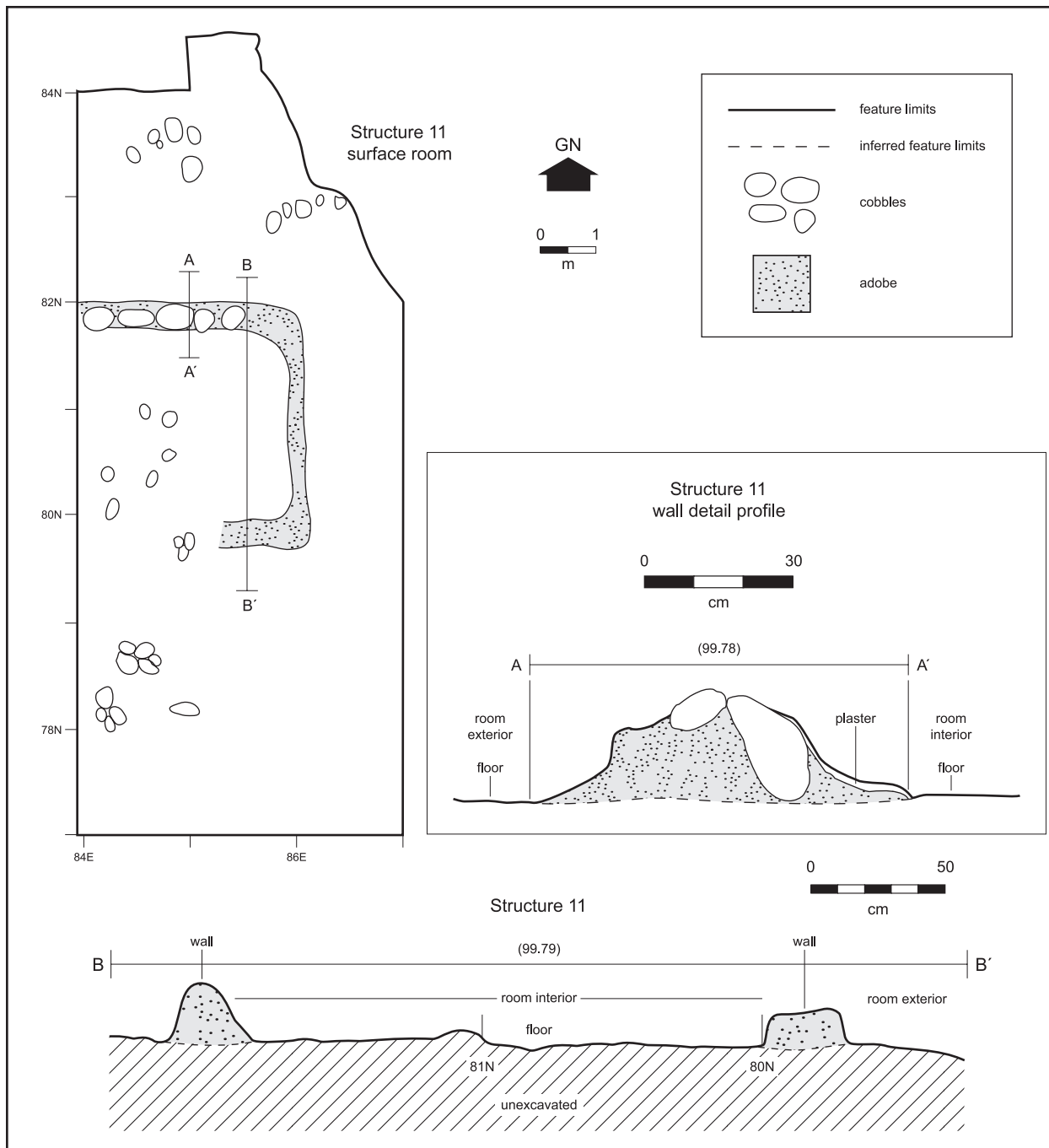


Figure 12.74. Structure 12, plan and profile.

lized small angular debris (33 percent) make up the majority of the assemblage. Two utilized flakes, a piece of utilized angular debris, and a utilized core were recovered from this provenience. These tools all exhibited unidirectional wear consistent with scraping on hard media like bone or wood. The tools were manufactured from obsidian and chert. The uti-

lized shaft portion of a drill was also recovered.

A single indeterminate ground stone fragment, made from fine-grained rhyolite, was also recovered.

Two animal bones were recovered from Structure 12. They were from a medium-large rodent and a large bird (turkey). Animal bone



Figure 12.75. Structure 12.

was more abundant in floor and floor fill and upper fill contexts from pit rooms and pit structures.

*Abandonment.* Structure 12 exhibits little evidence of abandonment or demolition activities. There was no evidence of catastrophic burning or the presence of roof closing material on or above the floor. If it were present, roof closing material may have been difficult to separate from wall melt and the natural Stratum 1 deposit. Artifact counts were high in the upper fill suggesting that a later occupation may have used the location for sheet trash discard. Trash filling of the structure was not evident. The best assessment of abandonment is that it was gradual and intentional. Dismantling of the structure apparently did not follow abandonment.

*Summary.* Structure 12 appears to be the last and only visible remnant of a pueblo ruin that ranged from large to average in size. Expected with a structure of more than ten rooms would have been a significant refuse deposit and a kiva. The surface of Area 1 did

yield a high frequency of Coalition period artifacts, but they were typically mixed with the debris from Early and Late Developmental components. Excavation beyond the right-of-way to the west might have exposed a larger structure. However, the primary kiva-room block orientation for North Bank site components was to the east or southeast. Therefore, it is unlikely that there is a kiva outside the right-of-way and that there was a kiva associated with this small room block remnant.

The projected room measurements for Structure 12 coincides with room dimensions from the North Bank site. Typically, these rooms were 3 to 4 m long on a north-south axis and 1.5 to 2.5 m wide on an east-west axis. Structure 12 had a complete north-south dimension of 2.5 and an incomplete 2.0 m east-west dimension. The longer east-west dimension suggests that Structure 12 was one room from an L-shaped room block with the remaining north-south rooms outside the right-of-way. The absence of floor features in Structure 12 indicates that it was used for storage or a

temporary shelter. Small surface room blocks were commonly constructed during the AD 1200s on the Pajarito Plateau and into the Tewa Basin to the north (Biella 1979; Skinner et al. 1976). The increase in surface rooms has been correlated with a change in residence pattern brought on by an population influx from the west and northwest.

### *Study Units*

During the initial evaluation of LA 6169, areas of high artifact density from mixed and specific periods or that exhibited depressions or rock concentrations were designated as Study Units. These initial designations were restricted to Area 1 on the west side of NM 22. Study Units 1 through 5 were assigned. The initial study unit designations were retained for Study Units 1 and 4. Study Units 2, 3, and 5 were subsumed under Study Units 10, 11, 12, and 13. The original surface collection proveniences from Area 1 had the initial Study Unit designations. These were recoded to reflect the reassigned Study Unit designations.

Study Units at LA 6169 were used to organize and distinguish large excavation blocks or smaller areas specific to a single feature or structure. The Study Units were not created as occupation components, especially since LA 6169 had highly mixed surface and near-surface deposits. Excavation of LA 6169 ultimately revealed three major temporal components represented by eight structures from the Early Developmental, Late Developmental, and Coalition periods.

Excavation and data collection within the Study Units included both hand and mechanical excavations. Obviously, the backhoe excavations cross-cut or segregated Study Units in Area 1. Mechanical scraping searched for and exposed dispersed extramural features in Study Units 6, 7, 8, 9, 10, 11, 12, and 13. Hand excavations were used to define the most general site stratigraphy, to investigate soil changes exposed in backhoe trench profiles, to surface strip zones around pit rooms and surface rooms, and to surface strip mechanically

scraped areas in search of extramural features and artifact concentrations. This latter use of hand surface stripping was extensively employed in Study Units 11 and 13.

Study Unit summary information is provided in Table 12.48. Following the table, each Study Unit is describe in more detail and the extramural features exposed within each are described and summarized.

**Study Unit 1.** Study Unit 1 incorporated the Structure 4 pit structure and Structure 15 pit room. Five exploratory grid units excavated in Study Unit 1 defined stratigraphy and estimated the depth and nature of the cultural deposit. Two units were on the perimeter of Structure 4, one of which, 85N/87E, contained an infant burial (Feature 1). Excavation of the structures and the adjacent areas comprised most of the work in Study Unit 1. Excavation outside the structure areas concentrated to the east where human remains (Features 3 and 46) were encountered. Feature 3 was exposed in the east wall of Backhoe Trench 2, which was the east limit of Study Unit 1 (see Fig. 12.2).

The most extensive hand excavation was in 85-90N/92-94E. Twelve units were excavated from 20 to 60 cm below the modern ground surface. Human remains encountered at 99.70 to 99.65 bd (Feature 46) were buried beneath 25 cm of Stratum 1. The area surrounding the burial yielded moderate amounts of refuse: Santa Fe Black-on-white and indented corrugated pottery suggested a Coalition period date for the deposit. Considerable rodent burrowing was observed accounting for the recovery of low frequencies of artifacts at a relatively great depth (60 cm). No evidence of Early or Late Developmental features or activity was encountered in this area.

Excavation along the north perimeter of Structure 4 revealed a circular pit filled with animal bone (Feature 29). This pit appeared at 99.35 bd suggesting that to the north of Structure 4 pit structure the old ground surface may have been 40 to 50 cm below the modern ground surface. This old ground surface was observed in backhoe trenches as the transition

between site Strata 1 and 2. Mechanical scraping of Study Unit 1 and adjacent Study Units ensured that structures and other large features or human burials were not missed by hand excavation.

Excavating north of Structure 4 and Feature 29 revealed Feature 69. Feature 69 was a thermal feature encountered at 99.62 bd. This feature is probably associated with the Coalition period occupation. Its elevation indicated a 25 to 30 cm stratigraphic break between the Early Developmental and Coalition period occupation surfaces in this area.

*Features.* Study Unit 1 features are listed and briefly described in Table 12.49. Two features, Feature 3 and Feature 46, were human remains that may date to the Coalition period. Feature 29 is a large burned pit filled with rabbit bone that dates to the Early Developmental period and Feature 69 is a large burned pit associated with Coalition period occupation.

Feature 3 was a 20- to 25-year-old adult human female burial interred in a large oval-shaped pit. The skeleton was in a semi-flexed position with its head oriented to the southeast. The burial pit was excavated into the transition between Strata 2 and 3. The pit fill was primarily Stratum 2 with a low frequency of artifacts suggesting burial into an existing sheet trash deposit. The burial was exposed in

the east wall of Backhoe Trench 2, where there was considerable rodent burrowing throughout Strata 2 and 3 and the burial pit. The excavator observed that numerous skeletal elements were displaced or missing, leading to the conclusion that the burial may have been a reinterment from another location on the site. Perhaps the burial was encountered during the construction of a pit room and reinterred in the soft Stratum 2/3 transition, where subsequent pit structures or pit rooms were unlikely to be built. If Feature 3 was a reburial, then the action occurred during the Coalition period because the burial pit fill contained artifacts from that time period. Specific osteological and pathological characterizations are provided in Chapter 22.

Feature 29 is one of the more interesting thermal features excavated at LA 6169. This 83 cm long by 56 cm wide by 40 cm deep pit was partly filled with a dense deposit of animal bone (Figs. 12.76, 12.77). The animal bone was mainly from the upper 20 cm of the pit. The bones were mixed with ash, charcoal, and Stratum 2. Oxidized adobe was also present suggesting that the fill was a mix of hearth cleanings and meat processing debris. Six hundred and seventy-eight bones were recovered (Table 12.50). The predominant species was desert cottontail, although a variety of small mammals, medium

Table 12.48. Study Unit Summary Information

SU	Area (sq m)	Hand	Non-architectural Features	Ceramic Date
		Excavation Area (sq m)		
1	91	17	3, 29, 46, 69, 187	Mainly Coalition with Early and Late Developmental
4	20	20		Coalition
6	450	20	6, 9, 51, 55, 77, 78, 79, 84, 88, 93, 96, 134, 146, 149	Mainly Coalition with Early and Late Developmental
7	126	28	52, 53, 54, 147, 156, 157	Mainly Coalition with Early and Late Developmental
8	216	17	86, 89, 90, 92, 145, 148, 151, 155	Mainly Coalition with Early and Late Developmental
9	270	5	9, 126, 127	Mainly Coalition with Early and Late Developmental
10	112	12		Coalition
11	192	130	2, 57, 60, 64, 124	Mainly Coalition with Early and Late Developmental
12	172	90	18, 135, 136, 137, 140, 141, 142, 143	Mainly Coalition with Early and Late Developmental
13	126	10	50, 67, 71, 140, 158, 159	Mainly Coalition with Early and Late Developmental

Table 12.49. LA 6169, Study Unit 1, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
3	Human burial	89N/96E	N/A	Strata II and III	Interred in bioturbated, coarse sand within limit of Pleistocene channel that cuts through Area 1. No evident architectural associations and fractured and scattered elements suggest that it was a secondary interment.
29	Large burned pit	89N/89E	83 X 56 X 40	Grayish brown (10YR 5/2) silty loam mixed with ash and charcoal and abundant animal bone. Bone occurs primarily in the upper 10 cm of fill.	Possible multipurpose pit with refuse and evidence of burning. May date to Early Developmental period. Excavated into the top of the wall of Feature 4 pit structure.
46	Disarticulated human skeletal elements	87N/94E	N/A	Stratum II	Secondary interment or heavy bioturbation. No associated pit or funerary items.
69	Large burned pit	90N/89E	70 X 54 X 8	Light gray brown (10YR 7/1) ashy, sandy loam.	Large, shallow, basin-shaped pit with slightly burned walls and charcoal-infused fill. No artifacts recovered. Probably dates to the Coalition period.

artiodactyls, and birds were identified. Of these, 22 percent showed evidence of roasting. The high proportion of desert cottontail indicated a single hunting episode. However, the variety of other species present suggests that this is an accumulated deposit with Feature 29 used as a trash pit. The 40 to 50 cm depth below surface of this feature indicates that it dated to the Early Developmental period.

This concentration of fauna represents an estimated 18 individual desert cottontail rabbits. Rabbit breeding occurs prolifically from March through August indicating that they may have been captured sometime between November and January. Unfortunately, procurement during the fall and winter does not coincide with a field hunting model. Therefore, it is possible that the animals were taken during a specialized hunting or foraging activity that occurred when Early Developmental pit structures were actively occupied, or these animals may have been taken to boost a food sup-

ply that was waning towards the end of the cold season. Scorching on six hind legs indicates that these animals were roasted and discarded, rather than pulverized and added to a stew. It appears that Feature 29 represents a momentary hunting episode reflecting a more flexible or adaptive hunting strategy than is typically demonstrated by other faunal assemblages from LA 6169.

Feature 46 was the disarticulated and partial skeletal remains of a 3- to 5-year-old child. The partial skeletal remains were encountered in Grid 87N/94E at 99.72 bd. The remains were at the transition between Strata 1 and 2 almost 50 cm below the modern ground surface. Excavation of a 15-sq-m block revealed that the human remains were in a low artifact frequency sheet trash deposit consisting of Coalition period ceramics and lithics. No burial pit was observed and it is possible that the partial condition results from reburial. Specific osteological and pathological characterizations are pro-

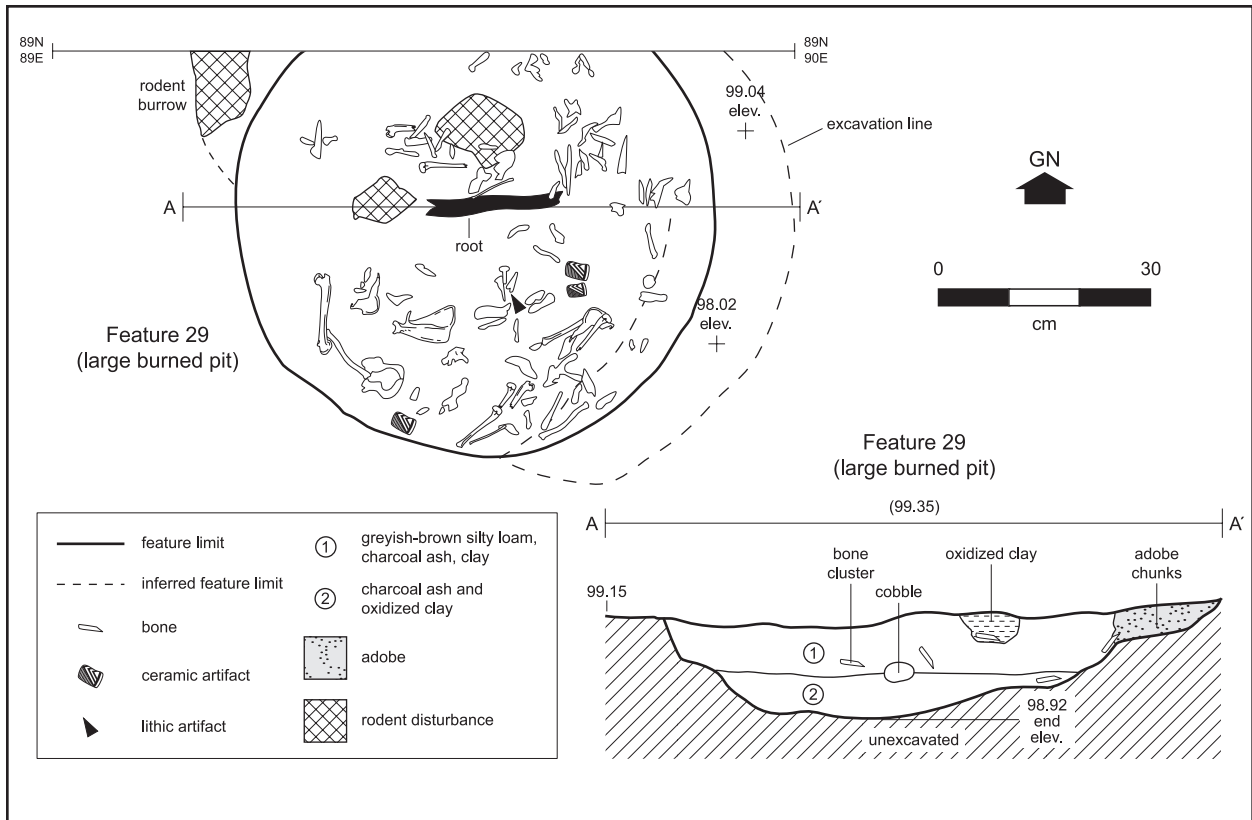


Figure 12.76. Study Unit 1, Feature 29, plan and profile.



Figure 12.77. Study 1, Feature 29.

Table 12.50. LA 6169 Study Unit 1 and Feature 29, Fauna Summary

	Nonfeature		Feature 29		Total	
	Count	Col %	Count	Col %	Count	Col %
Small mammal/med-large bird	-	-	12	1.8%	12	1.8%
Small mammal	-	-	87	12.8%	87	12.8%
Medium to large mammal	-	-	1	0.1%	1	0.1%
Large mammal	-	-	1	0.1%	1	0.1%
Gunnison's prairie dog	2	66.7%	-	-	2	0.3%
Botta's pocket gopher	-	-	2	0.3%	2	0.3%
Yellow-faced pocket gopher	1	33.3%	-	-	1	0.1%
Woodrats	-	-	1	0.1%	1	0.1%
Large woodrat	-	-	1	0.1%	1	0.1%
Desert cottontail	-	-	503	74.2%	503	73.9%
Black-tailed jackrabbit	-	-	47	6.9%	47	6.9%
Medium artiodactyl	-	-	15	2.2%	15	2.2%
Medium-large bird	-	-	6	0.9%	6	0.9%
Flicker	-	-	2	0.3%	2	0.3%
Group Total	3	100.0%	678	100.0%	681	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%
Total burned	-	-	148	21.8%	148	21.7%
Roasting burns	-	-	147	21.7%	147	21.6%
Heavy discard burns	-	-	1	0.1%	1	0.1%
Complete	-	-	214	31.6%	214	31.4%
>75% complete	-	-	56	8.3%	56	8.2%
50-75% complete	-	-	77	11.4%	77	11.3%
25-50% complete	3	100.0%	107	15.8%	110	16.2%
<25% complete	-	-	224	33.0%	224	32.9%

vided in Chapter 22.

Feature 69 was located between Structures 4 and 70 excavated into Stratum 2. This unlined, large burned pit measured 70 cm long by 50 cm wide by 8 cm deep (Fig. 12.78). It contained charcoal-infused soil and had lightly burned walls indicating that it was used in part as a thermal feature. Its stratigraphic position suggests that it dates to the Coalition period.

*Artifacts.* Artifacts recovered from extramural contexts within Study Unit 1 have been lumped into a single component. This component is classified according to the ceramic assemblage as mainly Coalition with mixed Early and Late Developmental. Artifacts were recovered from feature and non-feature contexts. Four features were identified, of which, Feature 29 yielded sherds, chipped stone, and animal bone. Feature 46, a disarticulated portion of a human skeleton yielded one sherd.

Non-feature contexts yielded 380 sherds, 160 lithic artifacts, and 3 animal bones.

Pottery recovered from extramural contexts in Study Unit 1 exhibits a wide temporal range. Santa Fe Black-on-white was the predominant pottery type and there were lesser frequencies of Galisteo Black-on-white, San Marcial Black-on-white, Kwahe'e Black-on-white, and Socorro Black-on-white (Table 12.51). Santa Fe Black-on-white occurs as both bowl and jar sherds, but there is an atypically high percentage (26.4 percent) of jar sherds. Utility wares are predominantly Middle Rio Grande pottery with lesser amounts of Northern Rio Grande pottery. The type distribution reflects the broad temporal span for the site and the extensive mixing of sheet trash deposits.

One hundred and sixty lithic artifacts were recovered from an extramural and sheet trash



area (Table 12.52). The majority consisted of chert (51 percent), nonvesicular igneous materials (34 percent), and chalcedony (11 percent). Four obsidian artifacts were recovered, while "other" igneous material, and nonlocal Grants obsidian categories were each represented by a single artifact.

The chert material category exhibited the highest frequency of chipped stone. This assemblage is represented by debitage indicating all stages of core reduction and formal tool manufacture. Primary decortication is indicated by five chert flakes with 100 percent dorsal cortex and a multi- and single-platform core. The bifacial manufacture of chert tools is also indicated in this area. Five flakes exhibited retouched platforms. The assemblage of nonvesicular igneous materials also reflects all stages of core reduction and tertiary tool manufacture. Primary decortication is reflected by three flakes exhibiting 100 percent dorsal cortex and two multiplatform cores. Secondary core reduction of nonvesicular igneous materials is indicated by 5 flakes with partial dorsal cortex and 27 flakes that lack dorsal cortex. Two nonvesicular igneous flakes exhibit retouched platforms indicating that bifacial tool manufacture also occurred. Flakes with retouched platforms provide further evidence for formal tool manufacture within the obsidian and chalcedony material categories. A flake from a hammerstone also indicates that these activities occurred in this area.

Unutilized flakes (65 percent) and unutilized small angular debris (28 percent) make up the majority of the assemblage. Both expedient and formal tools were recovered from this area. Two complete utilized flakes manufactured from obsidian and nonvesicular igneous material exhibit unidirectional wear typical of scraping on hard media like bone or wood. It is likely that these tools were used until they were no longer functional, and then discarded. A marginally retouched flake fragment manufactured from obsidian lacks evidence of utilization. The only formal tool was a complete drill made of nonvesicular igneous material. The tool also lacks evidence of use. A

fragment of a cobble with pigment residue was also recovered in this area.

**Study Unit 4.** Study Unit 4 was assigned to a 20-sq-m area that had 80N/84E as its southwest corner (see Fig. 12.2). Included in this unit was Structure 12, partial remains of surface structure foundation (previously described in the structure section). The structure was dated to the Coalition period based on associated ceramics. The near-surface context of the structure indicates that it may have been associated with the terminal prehistoric occupation of LA 6169. The 20 units excavated within and outside of Structure 12 yielded relatively high frequencies of artifacts suggesting that the area was covered by redeposited sheet trash following abandonment. No intramural or extramural features were associated with Structure 12. Excavated depth generally ranged from 10 to 25 cm below the modern ground surface. Artifacts recovered from Study Unit 4 were included in the analysis and description of Structure 12.

**Study Unit 6.** Study Unit 6 covered the southeast portion of the site in Area 2 (see Fig. 12.3).

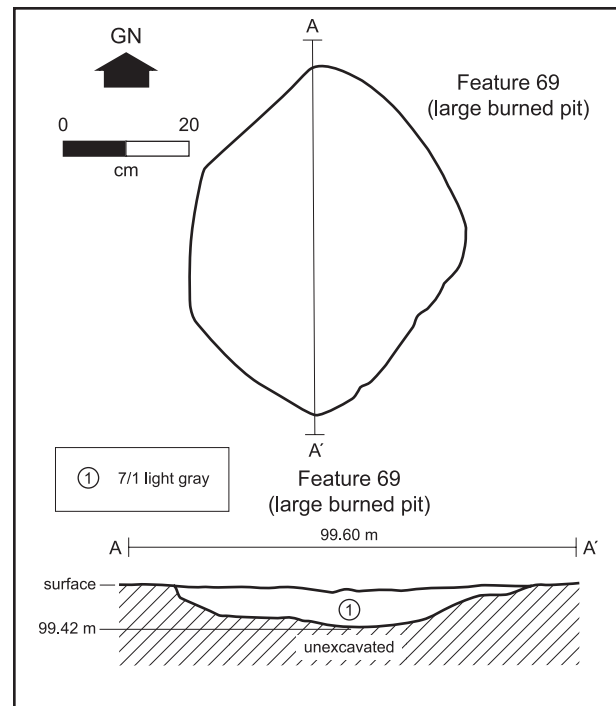


Figure 12.78. Study Unit 1, Feature 69, plan and profile.

Table 12.51. LA 6169, Distribution of Ceramic Type Assigned to Mainly Coalition with Early Developmental and Late Developmental Components

	Study Units 6, 7, 8, 9, 11				Total
	Study Unit 1 Extramural Area and Sheet Trash	Study Units 6, 7, 8, Extramural Areas and Sheet Trash	Study Units 8, 9 Extramural Area and Sheet Trash	Study Unit 11 Extramural Area and Sheet Trash	
Indeterminate utility ware	-	1 0.1%	-	2 0.3%	3 0.1%
Unpainted (undifferentiated white)	-	-	-	1 0.20%	1 0.00%
Indeterminate mineral paint undifferentiated	-	1 0.1%	-	-	1 0.0%
Unpainted undifferentiated	42 10.2%	59 4.3%	29 5.0%	33 5.3%	163 5.5%
NRG Mineral paint undifferentiated	-	9 0.7%	6 1.0%	17 2.7%	32 1.1%
Kwahe'e B/w (solid designs)	1 0.2%	6 0.4%	3 0.5%	16 2.6%	26 0.9%
Kwahe'e B/w (thin parallel line)	-	1 0.1%	-	1 0.2%	2 0.1%
Kwahe'e B/W (thick parallel lines)	-	2 0.1%	-	-	2 0.1%
Kwahe'e B/w (hatched designs)	-	-	2 0.3%	-	2 0.1%
Kwahe'e B/w (checkerboard)	-	-	-	1 0.2%	1 0.0%
Kwahe'e B/w	-	2 0.1%	1 0.2%	3 0.5%	6 0.2%
NRG Indeterminate organic paint	2 0.5%	-	-	-	2 0.1%
NRG Indeterminate organic (Coalition phase)	-	1 0.1%	-	-	1 0.0%
Santa Fe B/w	34 8.2%	13 1.0%	13 2.2%	36 5.8%	96 3.2%
Galisteo B/w	6 1.5%	-	-	-	6 0.2%
Unpainted (Galisteo paste)	2 0.5%	-	-	-	2 0.1%
NRG Plain rim	-	25 1.8%	5 0.9%	-	30 1.0%
NRG Unknown rim	-	1 0.1%	-	-	1 0.0%
NRG Plain body	9 2.2%	308 22.6%	84 14.5%	26 4.2%	427 14.3%
NRG Indented Corrugated	1 0.2%	282 20.7%	95 16.4%	21 3.4%	399 13.4%
NRG Plain Corrugated	5 1.2%	103 7.6%	82 14.2%	13 2.1%	203 6.8%
NRG Smear'd Plain Corrugated	13 3.1%	63 4.6%	4 0.7%	4 0.6%	84 2.8%
NRG Smear'd Indented Corrugated	-	33 2.4%	6 1.0%	8 1.3%	47 1.6%
NRG Mudware	-	1 0.1%	-	-	1 0.0%
MRG Plain rim	3 0.7%	5 0.4%	1 0.2%	12 1.9%	21 0.7%

Table 12.51. Continued.

	Study Unit 1 Extramural Area and Sheet Trash	Study Units 6, 7, 8, Extramural Areas and Sheet Trash	Study Units 8, 9 Extramural Area and Sheet Trash	Study Unit 11 Extramural Area and Sheet Trash	Total
MRG Unknown rim	-	1 0.1%	2 0.3%	-	3 0.1%
MRG Plain body	161 39.0%	337 24.7%	209 36.1%	283 45.4%	990 33.2%
MRG Wide Neckbanded	-	29 2.1%	-	-	29 1.0%
MRG Indented Corrugated	8 1.9%	19 1.4%	15 2.6%	11 1.8%	53 1.8%
MRG Plain Corrugated	42 10.2%	1 0.1%	-	3 0.5%	46 1.5%
MRG Smearred Plain Corrugated	37 9.0%	10 0.7%	-	24 3.8%	71 2.4%
MRG Smearred Indented Corrugated	27 6.5%	3 0.2%	-	16 2.6%	46 1.5%
MRG Polished gray	-	2 0.1%	-	1 0.2%	3 0.1%
MRG Plain Incised	1 0.2%	-	1 0.2%	-	2 0.1%
MRG Unpainted undifferentiated	4 1.0%	14 1.0%	1 0.2%	12 1.9%	31 1.0%
MRG Mineral Paint (undiff)	3 0.7%	12 0.9%	12 2.1%	10 1.6%	37 1.2%
Escavada solid designs	-	-	-	3 0.5%	3 0.1%
San Marcial B/w	3 0.7%	6 0.4%	3 0.5%	50 8.0%	62 2.1%
Wingate B/r	-	1 0.1%	-	-	1 0.0%
MRG Slipped Red over white paste (Tallahogan-like)	3 0.7%	2 0.1%	1 0.2%	12 1.9%	18 0.6%
Slipped over red paste	2 0.5%	-	-	3 0.5%	5 0.2%
El Paso Brown body	-	-	-	1 0.2%	1 0.0%
Unpainted with Chupadero paste	-	1 0.1%	-	-	1 0.0%
Jornada Brown body	-	1 0.1%	-	-	1 0.0%
Unpainted Socorro paste	2 0.5%	-	-	-	2 0.1%
Socorro B/w	-	5 0.4%	3 0.5%	-	8 0.3%
Socorro B/w (hatchured designs)	1 0.2%	1 0.1%	-	-	2 0.1%
Socorro B/w (hatchured and solid designs)	1 0.2%	1 0.1%	-	1 0.2%	3 0.1%
Reserve Plain Corrugated Smudged	-	-	1 0.2%	-	1 0.0%
Reserve Smudged	-	2 0.1%	-	-	2 0.1%
Total	413 100.0%	1364 100.0%	579 100.0%	624 100.0%	2980 100.0%

Table 12.52. LA 6169, Study Unit 1, Lithic Artifact Type by Material Type

	Material Group														Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other" Igneous		"Other" Non- local			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	1	2.2	29	64.4	-	-	2	4.4	13	28.9	-	-	-	-	45	28.0
Flake	16	15.4	50	48.1	1	1.0	-	-	37	35.6	-	-	-	-	104	65.0
Flake from Hammerstone	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Core, Multiplatform	-	-	1	33.3	-	-	-	-	2	66.7	-	-	-	-	3	1.0
Core, Single Platform	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	1	50.0	1	50.0	-	-	-	-	2	1.0
Flake, Marg Retouch	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Biface	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	1	<1
Drill	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	1	<1
Cobble with pigment	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	17	10.6	81	50.6	1	0.6	4	2.5	55	34.4	1	0.6	1	0.6	160	100.0

It stretched from 85 to 109N and 127-144E. There were no structures in Study Unit 6 and it is interpreted as an extramural space that was used by inhabitants of Structures 47 and 76. Excavations were primarily directed at defining the depth and ceramic age of the cultural deposit. In most areas the deposit was 20 cm thick with rapidly decreasing artifact frequencies below that depth. Excavation revealed 15 extramural features that probably date to all periods: Early and Late Developmental and Coalition. Excavation of contiguous grids in the 108-109N/134-137E area revealed high frequencies of mixed-age sheet trash. Artifact frequencies recovered from this area ranged from 2 to 294 with the lowest frequencies reported in the 95N grid row and the highest densities associated with the feature cluster south of Features 47/76 (pit structures) between Grids 105N and 109N.

Assigning a feature to a specific period is problematic given the broad temporal range of the study unit ceramic assemblage. A few features appear to have secondary trash or refuse that pre-dates the general site sheet trash. These features are associated with the Early or Late Developmental period. In general, most of the features represent a block of site structure that must be taken as a composite of site activities and not snapshots of temporally distinct activities. Table 12.53 provides the basic feature descriptions for all Study Unit 6 features.

Study Unit 6 was divided into north and south halves. The south half contained Features 134 and 146. The north half was com-

binced with all of Study Unit 7, and the area that included Structures 47/76 in Study Unit 8. Within this composite area were Study Unit 6, Features 6, 7, 9, 51, 55, 77, 78, 79, 84, 88, 93, 96, 136, and 149. Artifact assemblage distributions for the south half of Study Unit 6 and the combined study units are presented in Tables 12.51 and 12.54.

Feature 134 was located at the southern study unit limit, where the site was scraped down to the old ground surface at 98.51 BD. Feature 134 was a large, shallow unburned pit that was recognized as a large, dark brown outline on a scraped surface (Figs. 12.79, 12.80). This is an important observation because no other features were found in this southern part of Study Unit 6. Three strata were defined within Feature 134. Stratum I was a 4- to 8-cm-thick dark yellowish brown (10YR 4/4) sandy loam with dispersed, small charcoal flecks. It may be redeposited cultural fill representing a very thin sheet trash deposit. Stratum II was an 8- to 28-cm-thick dark grayish brown (10YR 4/2) clay loam mixed with charcoal and it was charcoal infused. Stratum II may have been a combination of charcoal and ash from very light roasting or parching and Stratum I. No evidence of oxidation or burning of the feature walls was observed indicating that any fire use was minimal or low temperature. At the bottom of Stratum II there were two chipped stone cores, three pieces of chipped stone debris, three plain gray sherds, and a small mammal bone. These artifacts may represent a terminal-use trash deposit. They were lying on a com-

pact surface that capped and separated Stratum II from Stratum III. Stratum III was a 4- to 10-cm-thick light brown (10YR 6/4) sandy loam with caliche, dispersed charcoal, and no artifacts. This layer appears to be an intentional filling layer on top of the feature floor and Feature 146, a burned pit dug into the feature floor (Fig. 12.79). At least two use episodes are indicated for Feature 134. The latest episode entailed some low intensity fire use in conjunction with processing activities. The latest use appears to have entailed heating coals in a small, shallow hearth and then distributing the coals within the large pit, perhaps for singeing, parching, or light roasting. The ceramics found within Feature 134 are 20 Middle Rio Grande Utility wares and 1 Northern Rio Grande Utility ware. The Middle Rio Grande Utility ware is tempered with local sandstone. This suggests that the feature was used during the Early Developmental period.

Outside Feature 134, artifacts recovered from surface stripping at the south end of Area 2 within Study Unit 6 included twelve sherds and nine lithic artifacts. Nine sherds were Middle Rio Grande Plain jar bodies and three were Northern Rio Grande Plain body sherds. Combined, these types suggest a mixed Early or Late Developmental date for the area.

Nine lithic artifacts were recovered from an extramural area and sheet trash (Study Unit 6). They were manufactured from chalcedony, Jemez obsidian, basalt, and rhyolite. The majority were unutilized flakes ( $n = 4$ ) and unutilized small angular debris ( $n = 2$ ). A rhyolite bifacial core, a chalcedony pecking stone, and a fine-grained rhyolite fragment of indeterminate ground stone was also recovered.

The remainder of Study Unit 6 was combined with all of Study Unit 7 and a part of Study Unit 8 for the analysis of the feature cluster located south of Structures 47/76.

As previously described, combined Study Units 6, 7, and 8 included Features 6, 9, 51, 55, 77, 78, 79, 84, 88, 93, 96, 146, and 149 from Study Unit 6. Pottery was recovered from Features 6, 55, 77, 78, 79, and 88, and 149. Faunal remains were recovered from Feature

79, 88, 149, and 156. The frequencies for these artifact classes are presented in Tables 12.51, 12.54, and 12.55. Figures 12.81 to 12.83 show the plan and profiles for these features. Excavation photographs are presented for the features described in more detail below.

Feature 79 was a large bifurcated burned pit (Fig. 12.79). It was divided into two basins. The largest basin contained several burned pebbles, a few pieces of fire-cracked rock, and 84 Late Developmental period sherds. The steep sides were lightly burned and the feature floor was oxidized in patches. The main basin had two soil layers. Stratum I was a dark brown (10YR 4/3) silty loam with diffuse charcoal, less than 5 percent pea gravel, cobbles, and fire-cracked rock. This layer appeared to be a mix of Stratum 1 and a cultural deposit related to feature use. Stratum II was a very dark brown (10YR 2/2) silty loam that was heavily charcoal-infused, though little charcoal remained. A mix of primary and secondary deposits were observed. This may have been the main heating pit. The smaller basin was filled with Stratum I, was not burned, and may have been used to hold coals or plant parts, fruits, nuts, or seeds that were processed or waiting to be processed. The secondary pit was shallower and smaller than the primary heating pit. This feature may be associated with the occupation of Structure 76. Ceramics included Middle and Northern Rio Grande utility wares and a single sherd of San Marcial Black-on-white. Six pieces of animal bone from antelope, cottontail rabbit, yellow-faced pocket gopher, and indeterminate small, medium, and large mammals were recovered. Low frequencies of charred seeds and fruits were recovered including corn, *Chenopodium*, Amaranth, and piñon. This range of plant foods suggest that Feature 79 served as a multipurpose roasting or parching pit.

Feature 84 was a cobble-lined pit (Fig. 12.85). This feature contained very dark charcoal-infused soil and 50 to 60 fire-cracked rock spalls suggesting that it had been repeatedly and heavily used. No artifacts were found in the feature indicating that it may have been

Table 12.53. Extramural Features, Study Unit 6, Area 2

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
6	Large pit	105N/130	63 X 60 X 42	Pale brown (10YR 6/5) silty loam with dispersed charcoal and less than 1 percent gravel.	Unburned, steep-walled pit with lightly charcoal-stained redeposited fill. Contained Kwahe'e Black-on-white, probable Late Developmental period feature
9	Historic rock-filled pit	105N/129E	80 X 63 X 24	Pale brown (10YR 6/5) loam.	
51	Small pit	108N/137E	55 X 42 X 12	Grayish brown (10YR 5/2), sandy loam with dispersed charcoal.	Oval-shaped pit with moderately steep sides. Lightly charcoal-stained fill. No function assigned.
55	Large pit	108N/132E	80 X 75 X 18	Grayish brown (10YR 5/2), consolidated, sandy loam with dispersed charcoal.	Oval-shaped pit with charcoal-stained fill. Moderately steep sides and basin-shape. 37 sherds predominated by Northern Rio Grande corrugated, Middle Rio Grande plain, and one Kwahe'e Black-on-white sherd. Probable Late Developmental period use.
77	Undifferentiated basin-shaped pit	104N/132E	73 X 72 X 8	Grayish brown (10YR 5/2), consolidated, sandy loam with dispersed charcoal.	Basin-shaped pit with redeposited cultural fill. Four sherds of Middle Rio Grande plain body. No function or date assigned.
78	Large pit	105N/133E	66 X 63 X 26	Pale brown (10YR 6/3) silty loam with dispersed charcoal.	Circular, basin-shaped pit. Unburned with low artifact counts. No function or date assigned.
79	Large bifurcated burned pit	103N/136E	165 X 145 X 28 98 X 95 X 16	see text	Large bifurcated pit, darkly stained fill suggests that fill was used to process or cook gathered plants or animals. Probable late Developmental based on recovery of a mix of plain and corrugated Northern and Middle Rio Grande utility pottery.
84	Large cobble-lined hearth	108N/139	78 X 69 X 16	Very dark grayish brown (10YR 3/2) sandy loam darkly stained by diffused charcoal and ash. Appeared to be a primary deposit reflecting terminal feature use.	Cobble-lined thermal feature with fire-cracked rock spalls and evidence of thermal alteration on cobbles. Roasting pit or hearth was well used and contained darkly charcoal and ash-stained soil.
88	Large burned pit	106N/137E	82 X 73 X 30	see text	Four distinct strata indicate feature was used repeatedly, plain gray ware on the feature floor suggests Early Developmental period.
93	Small pit	108N/133E	17 X 17 X 10	Dark grayish brown (10YR 4/2) sandy loam.	Shallow, oval pit with steep sides and a basin-shaped bottom. Feature may have been used with fire or coals. No dated assigned.
96	Small burned pit	107N/136E	22 X 22 X 11	Yellowish brown (10YR 5/4) redeposited Stratum 1 and charcoal-infused sandy loam.	Roughly circular, steep-walled pit. Feature was lightly burned and was used with fire or coals. No date assigned.
134	Large pit	88N/133E	127 X 110 X 30	see text	A large pit with primary refuse deposit including cores and ground stone fragments. Ceramics suggest Early Developmental period date.
146	Small burned pit	88N/133E	45 X 45 X 13	see text	Circular, burned pit built into the bottom of F. 134. Probable Early Developmental period date.
149	Large cobble-filled roasting pit	108N/129E	100 X 87 X 14	see text	Trash-filled roasting pit. Late Developmental or Coalition period ceramics.

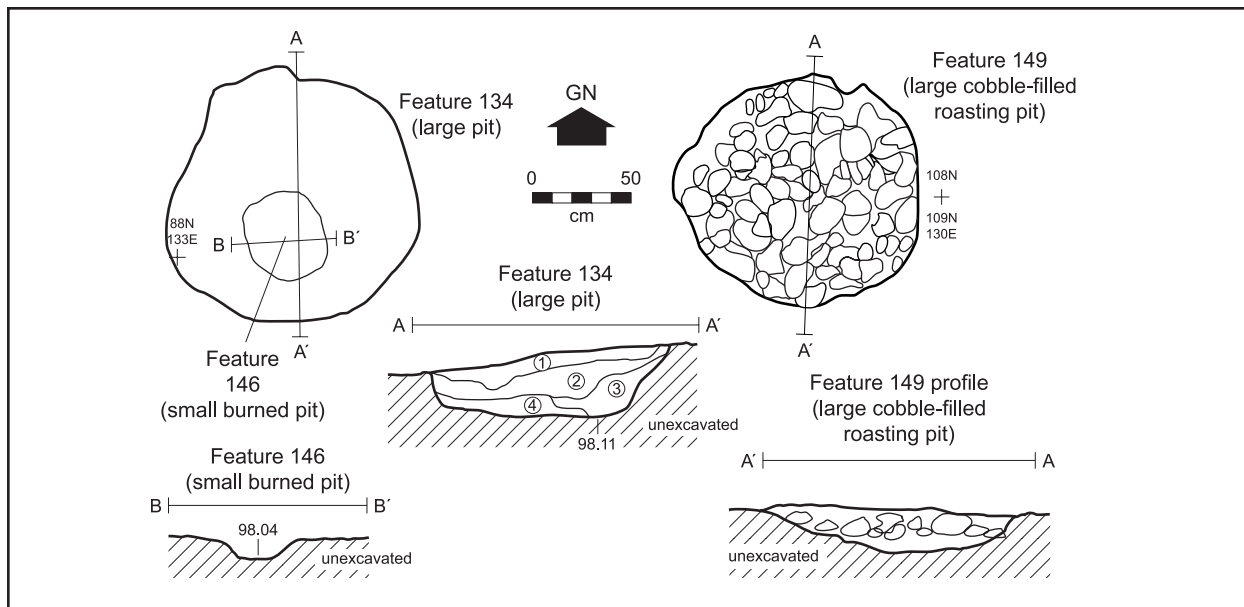


Figure 12.79. Study Unit 6, Features 134, 146, and 149.

covered with soil after its final use. This is one of the few cobble-lined thermal features found in the extramural areas.

Feature 88 was a large, steep walled, burned, multipurpose pit (Fig. 12.86). It exhibited four stratigraphic layers that suggested four possible use episodes. Stratum I was a dark yellowish brown (10YR 3/4) sandy loam that was ash and charcoal infused. There were artifacts and fire-cracked rock mixed with this layer. Stratum II was dark brown (10YR 4/3) compacted sandy loam with caliche, ash, and charcoal. It appeared to be a mix of primary and secondary deposits representing a second use episode. Stratum III was a very dark grayish brown (10YR 3/2) consolidated, sandy loam with large chunks of wood charcoal and ash staining. Sherds and lithics were recovered from this layer. Stratum IV was a 14-cm-thick pale brown (10YR 6/3) clay loam with chunks of wood charcoal, but less charcoal infusion. Twenty-two sherds, lithics, a core and a chopper were recovered from the pit floor. Fauna totaled 13 bones with small and medium-large mammals represented. The bones were highly fragmented indicated intensive processing, such as for boiling or pot cooking rather than roasting. Ethnobotanical analysis identified *Chenopodium* and corn in low frequency. Corn

cobs may have been used for fuel and grasses may have been used in heating other plant foods or they were parched for consumption, although Feature 88 is not typical of a parching pit. Ceramics recovered from this feature suggest an Early Developmental date. Different use episodes that resulted in a progressively shallower pit may represent changing feature function from a deep roasting pit into a shallower hearth or parching feature.

Feature 149 is a large, cobble-filled roasting pit (Fig. 12.87). The fill was deeply charcoal-infused (10YR 4/2, dark grayish brown) and contained abundant sherd and lithic artifacts and lesser amounts of animal bone. The feature is shallow and basin-shaped. The cobbles fill the pit in layers that contained artifacts from top to bottom. This suggests that the feature was used multiple times and smothered with trash-impregnated fill that left artifacts intermingled with the cobbles after it was cleaned out. All the cobbles are burned or sooted and 10 percent are fire-cracked. This suggests that all cobbles were used in an active fire. Ethnobotanical analysis yielded *Chenopodium*, *Portulaca*, and cholla cactus in low frequency. Fifty-nine sherds were primarily Middle and Northern Rio Grande Plain and corrugated utility wares. This regional mix of utility wares



Figure 12.80. Feature 134.

appears to be a trait of the Late Developmental occupation at LA 6169. Seven animal bones including black-tailed jackrabbit and mule deer were recovered.

*Artifact Assemblage.* The following artifact assemblage characterizations apply to all features and the sampled extramural space within the combined Study Units 6, 7, and 8 area. Features with specific or unique assemblage characteristics have artifact descriptions included with the narratives.

A total of 1,364 sherds were recovered from the combined Study Units 6, 7, and 8 (Table 12.51). Decorated pottery includes San Marcial, Kwahe'e, and Santa Fe Black-on-whites, reflecting the long site history and the well-mixed character of the sheet trash deposit that covers this area. Utility pottery exhibits a similar assemblage pattern with the full range of plain and corrugated types represented.

Three hundred and fifty-eight lithic artifacts were recovered from extramural areas and sheet trash (Study Units 6, 7, and 8). The majority of these were manufactured from nonvesicular igneous materials (44 percent) and chalcedony (43

percent). Low frequencies of Jemez obsidian ( $n = 19$ ), chert ( $n = 11$ ), quartzite ( $n = 11$ ), vesicular igneous ( $n = 1$ ), "other" igneous ( $n = 1$ ), and "other" local material ( $n = 1$ ) were also represented.

The assemblage indicates an emphasis on later stages of secondary core reduction. Eighty-seven percent of the whole flakes lack dorsal cortex and 71 percent of the flakes with platforms are single-faceted. Evidence of bifacial tool manufacturing is indicated by flakes with retouched platforms within the chalcedony ( $n = 3$ ), obsidian ( $n = 6$ ), and nonvesicular igneous ( $n = 1$ ) material categories. Bifacial thinning flakes were also recovered. An obsidian bifacial resharpening flake and a chalcedony uniface resharpening flake indicate that formal tools were refurbished in this provenience. Six multiplatform cores were manufactured from chalcedony and one single-platform obsidian core was also recovered. The assemblage also included a hammerstone and a unifacial chopper manufactured from quartzite.

Unutilized flakes (72 percent) and unuti-



Table 12.54. LA6169, Study Units 6, 7, and 8 Extramural Areas and Sheet Trash, Lithic Artifact Type by Material Type

	Material Group																	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		Vesicular Igneous		"Other" Igneous		"Other" Local		Grouped Material Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	36	46.8	5	6.5	-	-	2	2.6	34	44.2	-	-	-	-	-	-	77	21.0
Flake	111	43.0	6	2.3	8	3.1	13	5.0	118	45.7	-	-	1	0.4	1	0.4	258	72.0
Flake, Bifacial Thin	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	2	<1
Flake, Sharpening	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Flake, Uniface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resharp	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	6	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1.0
Core, Single Platform	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	1	<1
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Chopper, Unifacial	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	<1
Flake, Utilized	-	-	-	-	-	-	1	33.3	2	66.7	-	-	-	-	-	-	3	<1
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	<1
Uniface	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Mano, Unknown	-	-	-	-	1	50.0	-	-	-	-	1	50.0	-	-	-	-	2	<1
Metate, Unknown	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Grinding slab	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	2	<1
Total	155	43.3	11	3.1	11	3.1	19	5.3	159	44.4	1	0.3	1	0.3	1	0.3	358	100.0

Table 12.55. LA 6169 Summary of Fauna from Study Unit 6, 7, and 8 by Feature

	Nonfeature		Feature 79		Feature 88		Feature 149		Feature 156		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	-	-	-	-	7	53.8%	2	28.6%	-	-	9	22.0%
Small-medium mammal	-	-	1	16.7%	-	-	-	-	-	-	1	2.4%
Medium mammal	-	-	1	16.7%	-	-	-	-	-	-	1	2.4%
Medium-large mammal	-	-	-	-	5	38.5%	3	42.9%	-	-	8	19.5%
Large mammal	1	12.5%	-	-	-	-	-	-	5	71.4%	6	14.6%
Yellow-faced pocket gopher	4	50.0%	-	-	-	-	-	-	-	-	4	9.8%
Desert cottontail	1	12.5%	1	16.7%	1	7.7%	1	14.3%	-	-	4	9.8%
Medium artiodactyl	2	25.0%	1	16.7%	-	-	-	-	-	-	3	7.3%
Mule deer	-	-	1	16.7%	-	-	1	14.3%	-	-	2	4.9%
Pronghorn	-	-	1	16.7%	-	-	-	-	-	-	1	2.4%
Bighorn sheep	-	-	-	-	-	-	-	-	2	28.6%	2	4.9%
Group Total	8	100.0%	6	100.0%	13	100.0%	7	100.0%	7	100.0%	41	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Light/scorch	1	12.5%	-	-	-	-	-	-	-	-	1	2.4%
Light to heavy	-	-	-	-	-	-	-	-	6	85.7%	6	14.6%
Heavy or black	-	-	-	-	-	-	1	14.3%	1	14.3%	2	4.9%
Heavy to calcined	-	-	-	-	-	-	1	14.3%	-	-	1	2.4%
Calcined	-	-	-	-	2	15.4%	-	-	-	-	2	4.9%
>75% complete	-	-	1	16.7%	-	-	-	-	-	-	1	2.4%
50-75% complete	1	12.5%	-	-	-	-	-	-	-	-	1	2.4%
25-50% complete	3	37.5%	2	33.3%	-	-	-	-	-	-	5	12.2%
<25% complete	4	50.0%	3	50.0%	13	100.0%	7	100.0%	7	100.0%	34	82.9%

lized small angular debris (n = 1) compose the majority of the assemblage. The tools in the assemblage consist of three utilized flake tools manufactured from obsidian and nonvesicular igneous materials and two unifacial tools also manufactured from the same material. The flake tools are whole and exhibit unidirectional wear typical of scraping on bone or wood. Because functional edges are complete, it is likely these tools were used and then discarded when they were no longer functional for their intended task. The two unifacial tools lack evidence of use although the whole nonvesicu-

lar igneous uniface exhibits a complete functional edge. This artifact may have been utilized but resulting wear patterns cannot be identified with 60x magnification. The uniface fragment also lacks evidence of utilization.

Two complete grinding slabs, made of fine-grained and coarse-grained rhyolite, were recovered. Fragments of two different manos, one made of medium-grained quartzite and the other vesicular basalt, and a metate fragment of fine-grained rhyolite were also recovered.

Faunal remains distribution is interesting

because of the emphasis on medium to large artiodactyl bones recovered from Features 79, 88, and 149 (Table 12.55). These features yielded low frequencies ranging from six to thirteen bones, but medium to large artiodactyl were in the majority in every case. Mule deer, pronghorn, and bighorn sheep were identified. Most parts were from the feet and only Feature 156 bone exhibited burning typical of meat roasting. Although inconclusive, it appears that

these extramural thermal features were partly used for roasting meat packages that were brought to the site from grassland, woodland, and foothill hunting forays.

The Study Unit 6 features from the combined Study Units 6, 7, and 8 are a cluster of Early and Late Developmental period facilities. Their tight distribution undoubtedly reflects the proximity to and superimposed nature of the Structures 47/76. Clearly, the bulk of the processing features regardless of occupation were located south of the structures. This accounts for the high density of artifacts that were recovered from the north end of Study Unit 6 and Study Unit 7. Artifact and ethnobotanical data are inconclusive for feature function. The relatively consistent spectrum of plant, animal, and artifact remains suggest that features had non-specific uses or they were incipient refuse containers and their contents reflect long-term food processing and discard without reference to a specific period.

**Study Unit 7.** Study Unit 7 was assigned before the Structures 47/76 were discovered. Study Unit 7 covered the portion of the site immediately south of Structures 47/76 area in Area 2. It stretched from 110–116N and 127–144E. It was primarily extramural space, but included a narrow strip that extended north into Features 47/76. Hand excavations defined the depth and ceramic age of the cultural deposit. In most areas, the deposit was 20 cm thick with rapidly decreasing artifact frequencies below the 20 cm level. Excavation revealed six extramural features. Excavation of grid blocks and trenches immediately south of Structures 47/76 yielded similarly high frequencies of mixed-age sheet trash, as were found in the northern portion of Study Unit 6. Artifact frequencies recovered from this area ranged from 4 to 322 with the highest densities associated with the feature cluster 5 m southeast of Structures 47/76. Feature descriptions are provided in Table 12.56 and they are shown in Figure 12.88.

Study Unit 7 features are part of a cluster that was partly in Study Unit 6 and is south of

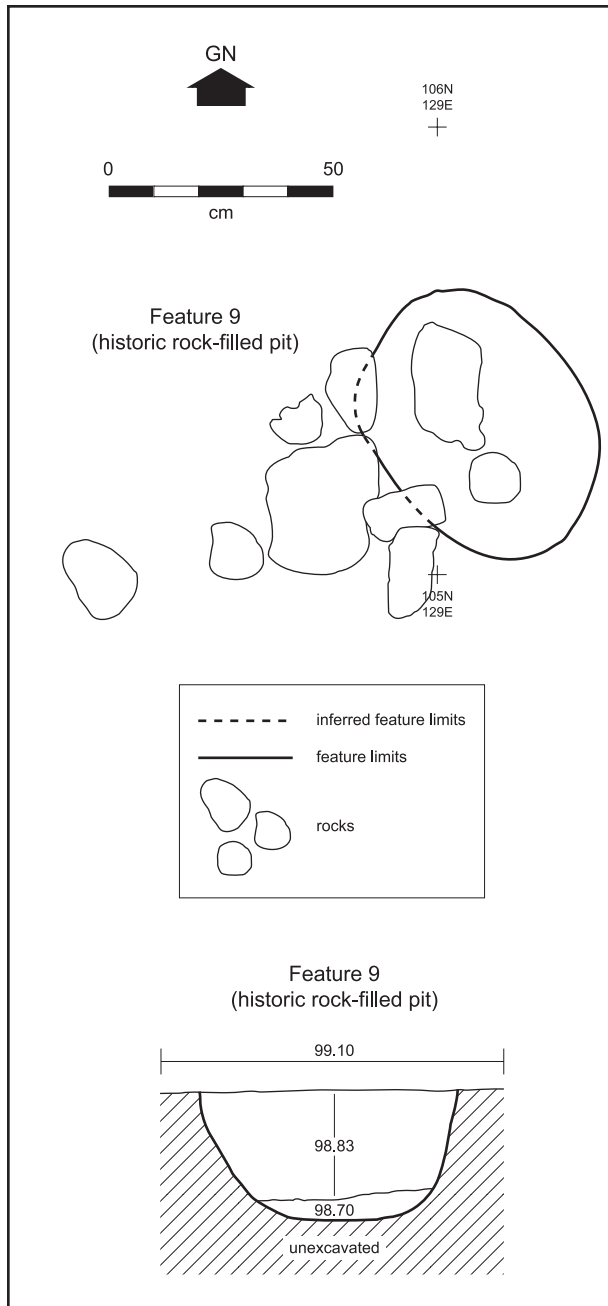


Figure 12.81. Study Unit 6, Feature 9, plan and profile.

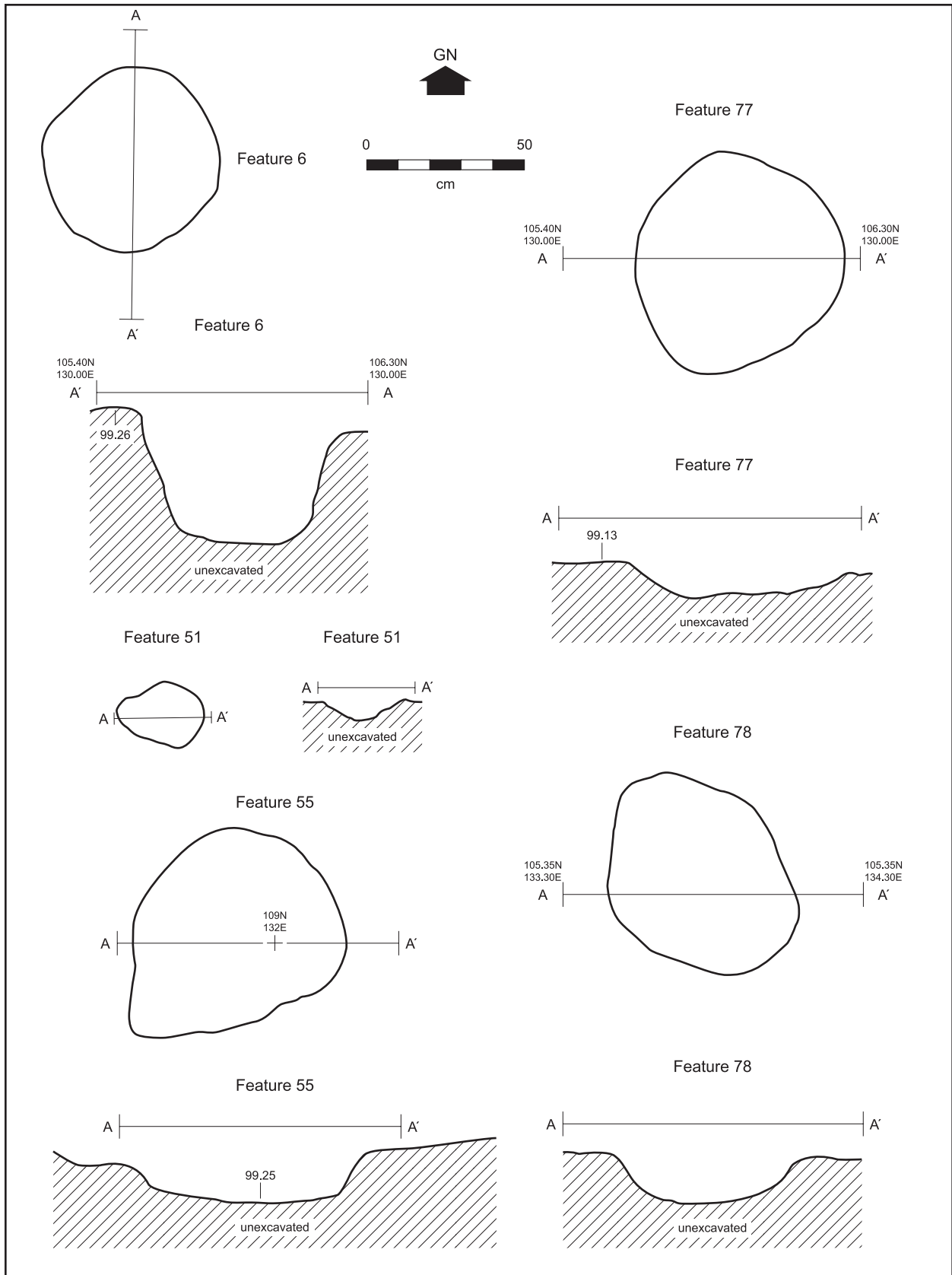


Figure 12.82. Study Unit 6, Features 6, 51, 77, 55, 78, X plan and profile.

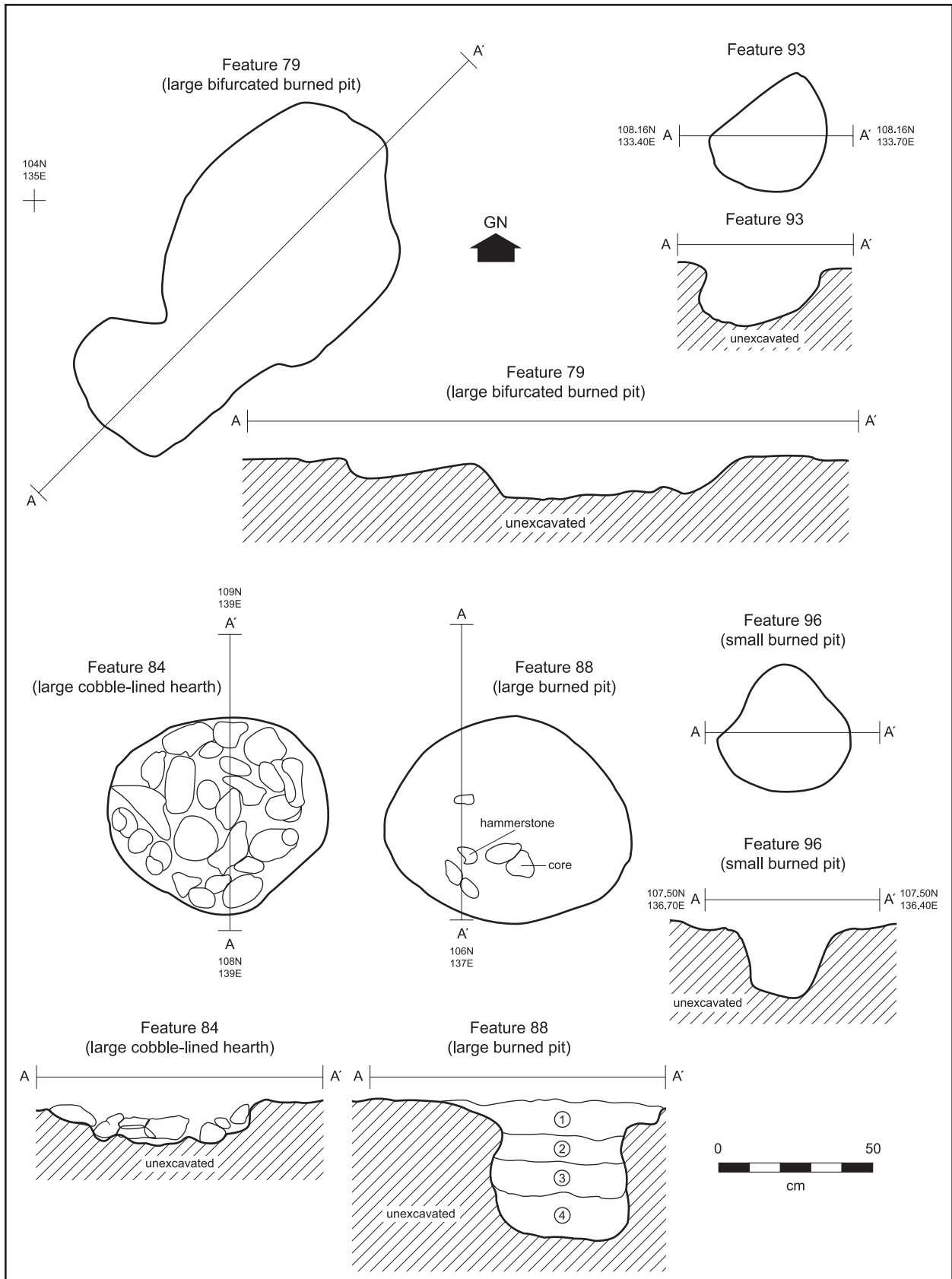


Figure 12.83. Study Unit 6, Feature 79, 84, 88, 93, 96 plan and profile.



Figure 12.84. Study Unit 7, Feature 79.



Figure 12.85. Study Unit 7, Feature 84.



Figure 12.86. Study Unit 6, Feature 88.

Table 12.56. Feature Descriptions from Study Unit 7

Feature No.	Type	Location	Dimensions (cm)	Fill	Comments
52	Small unburned pit	110N/137E	23 X 6 (partial measurement) X 12	Redeposited Stratum 1, Fill is lightly charcoal-infused.	Unburned pit with steep walls and an irregular bottom. Feature walls show no evidence of burning. No artifacts recovered or date assigned.
54	Possible posthole	110N/135E	10 X 7 X 12	Redeposited charcoal-infused Stratum 1.	This a steep-walled pit. Excavator suggested that it was a posthole. This may remain from a simple ramada that shaded an activity area.
147	Cobble-filled roasting pit	111N/131E	76 X 71 X 16	Dark yellowish brown (10YR 4/4) sandy loam with diffused charcoal burned cobble spalls and fire-cracked rock.	Difficult to determine if this is cobble-lined or cobble-filled. Upright basalt cobble along south wall suggests the pit may have been lined at one time. Cobble cluster within the pit suggests that it was used for roasting. Probable Late Developmental period use based on associated ceramics.
156	Large burned pit	110N/130E	65 X 60 X 12	Dark grayish brown (10YR 4/2) fine sandy loam with diffused charcoal.	Basin-shaped and no fire-cracked rock, but a charcoal-infused soil halo extending east from the feature may remain from clean-out and maintenance. Feature fill contained low frequencies of sherds, chipped stone, animal bone, and ground stone. Seven animal bones were from mule deer or large mammal.
157	Posthole base	113N/130E	18 X 18 X 7	Dark grayish brown (10YR 4/2) fine sandy loam with diffused charcoal.	Shallow, small steep-walled pit filled with secondary Stratum 1. Excavator suggested feature was a posthole.



Figure 12.87. Study Unit 6, Feature 149.

Structures 47/76. These features exhibit a wide range in size and content suggesting they supported a variety of subsistence activities. None of the Study Unit 7 features were as large as the Study Unit 6 features and they lacked visible evidence of reuse or remodeling. The charcoal-infused soil halo around Feature 147 and 156 suggests these features were cleaned out and used repeatedly. Multipurpose features and evidence for reuse would be expected with a multi-year residential occupation. The mix of Middle and Northern Rio Grande utility wares that were recovered from Features 147 and 156 indicate that they were in use during the Late

Developmental period. Mule deer and large mammal bones were recovered from Feature 156. Six bones were burned suggesting that they were tossed into an active fire. High percentages of burned bone are unusual for LA 6169. Their occurrence in Feature 156 suggests meat or bone processing as an activity associated with this area.

**Study Unit 8.** Study Unit 8 was assigned before the Structures 47/76 were discovered. Study Unit 8 encompassed the majority of the Structure 47/76 area and 8 m to the north. It stretched from 117-129N and 127-144E. Hand

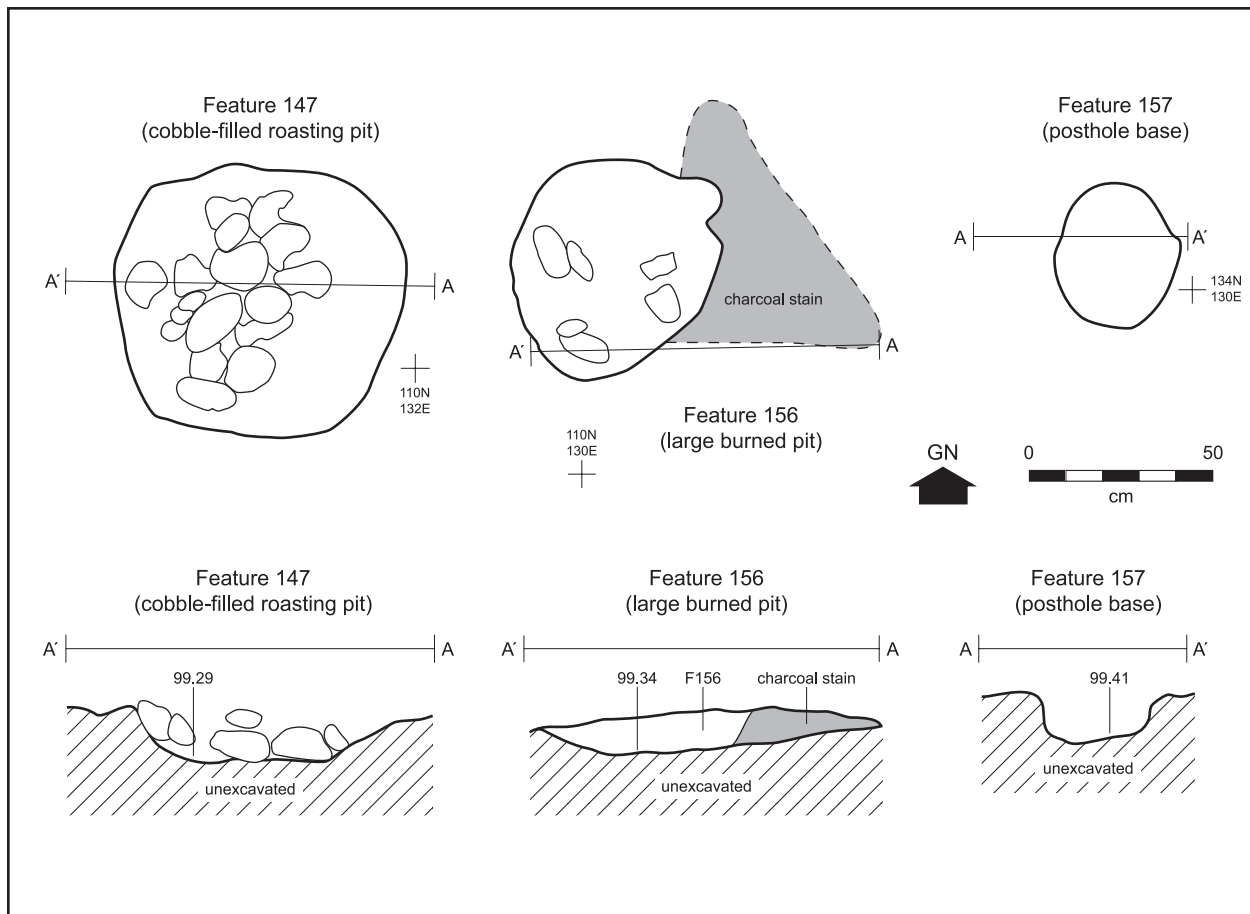


Figure 12.88. Study Unit 7, Features 147, 156, 157, plan and profile.

excavations defined the depth and ceramic age of the cultural deposit and assessed the potential for buried features. In most areas the deposit was 20 cm thick with rapidly decreasing artifact frequencies below the 20 cm level. Excavation of grids immediately north of Structures 47/76 yielded high frequencies of mixed-age sheet trash, similar to Study Unit 7. Artifact frequencies recovered from the area to the north of Structures 47/76 ranged from 11 to 282. Mechanical scraping removed the majority of Stratum 1 to the top of Stratum 2, which was identified as the old ground surface, and exposed eight extramural features. Features 151 and 155 were combined with features from Study Units 6 and 7 as part of the Structure 47/76 extramural area extending south from Grid 120N. Features 86, 89, 90, 92, 145, and 148 were located north of Structures 47/76, representing a second activity area. Study Unit 8 feature descriptions are provided in Table 12.57.

Features 151 and 155 (Fig. 12.89) were superimposed pits excavated into the upper fill of Structure 47 above its east wall. The feature limits extended into the upper level of Structure 47 indicating that they date to the Late Developmental or Coalition periods. Their proximity to Structure 76 suggests that they were not used during the Structure 76 occupation, but were part of an earlier or later Late Developmental component. Sixteen sherds were recovered from Feature 151, but they could not be used to refine the feature date. Feature 155 yielded low frequencies of charred seeds (see Chapter 23) and *Zea mays*.

Six pit features were exposed north of Structures 47/76 and were included with the Study Unit 9 features as an analytical unit. Features 86, 89, 90, 92, 145, and 148 are described in Table 12.57 and plan and profiles are provided in Figure 12.90. Except for Feature 145, the features are unburned pits.



These small pits may have functioned as post-holes or temporary storage pits. None of the features could be dated from associated ceramic types.

*Artifact Assemblage.* Artifact distributions for the combined Study Units 6, 7, and 8 were provided with the Study 6 discussion. Distributions of these artifacts are presented in Tables 12.51, 12.54, and 12.58. Because of low ceramic counts, these features cannot be readily assigned to a particular period.

Five hundred and seventy-nine sherds were recovered from the north half of Study Unit 8 and Study Unit 9. Decorated pottery types were predominantly Santa Fe Black-on-white with minor amounts of Kwahe'e Black-on-white. Utility wares are Middle and

Northern Rio Grande Plain and Corrugated with the latter slightly more prevalent (55 percent to 45 percent). The utility ware mix is very similar to the temper percentages found in the roof fall and floor fill from Structure 76. This similarity suggests that the predominant deposit north of Structure 76 dates to the Late Developmental period. Curiously, this does not match the predominance of Santa Fe Black-on-white indicating there is some Coalition period mixing.

One hundred and twenty lithic artifacts were recovered from extramural areas and sheet trash (Study Units 8 and 9) (Table 12.58). The majority were manufactured from chalcedony (45 percent) and nonvesicular igneous materials (40 percent). Low frequencies of Jemez obsidian ( $n = 15$ ), chert ( $n = 2$ ), and quartzite ( $n = 1$ ) were also represented.

The chipped stone assemblage indicates an emphasis on secondary core reduction. Seventy-four percent of the whole flakes lack dorsal cortex and an additional 18 percent exhibit partial dorsal cortex. An obsidian bifacial thinning flake and two flakes manufactured from nonvesicular igneous materials exhibit retouched platforms indicating that bifacial tool manufacture occurred in these areas. A chalcedony multiplatform core was also recovered.

Unutilized flakes (71 percent) and unutilized small angular debris (20 percent) make up the majority of the assemblage. Both expedient and formal tools were recovered from this area. Two utilized flakes and a utilized piece of angular debris exhibit unidirectional wear typical of scraping on hard media like bone and wood. An obsidian projectile point base and biface fragment were also recovered. The biface exhibited unidirectional wear on a functionally truncated edge. It is likely that this tool broke during use.

These features yielded low frequencies of faunal remains (Table 12.59). From one to thirteen bones were recovered with medium and large mammal the most common, which was the same pattern observed for the combined Study Unit 6, 7, and 8 features. However, the

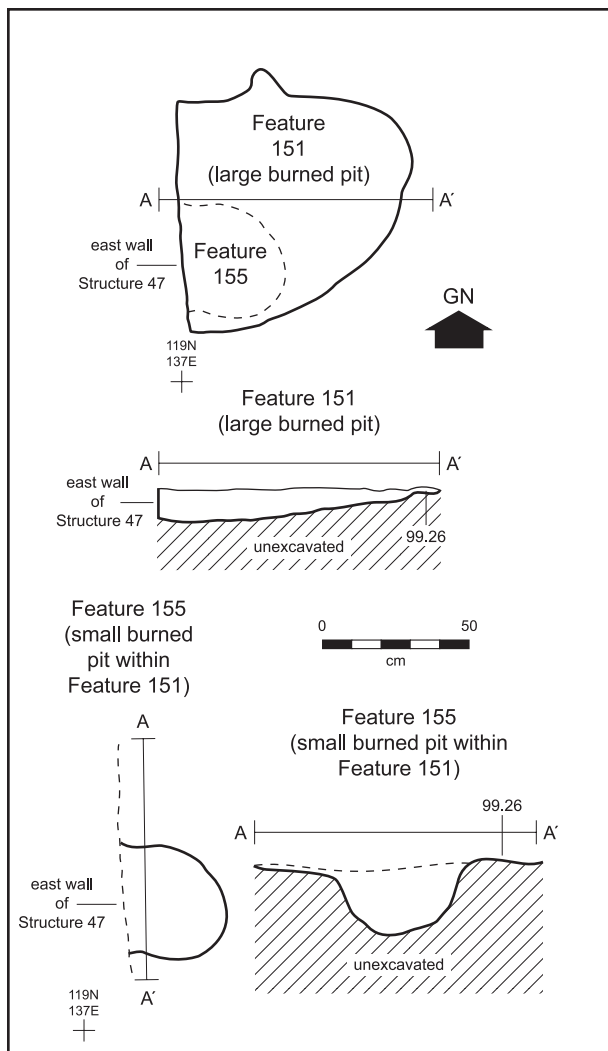


Figure 12.89. Study Unit 8, Features 151, 155, plan and profile.

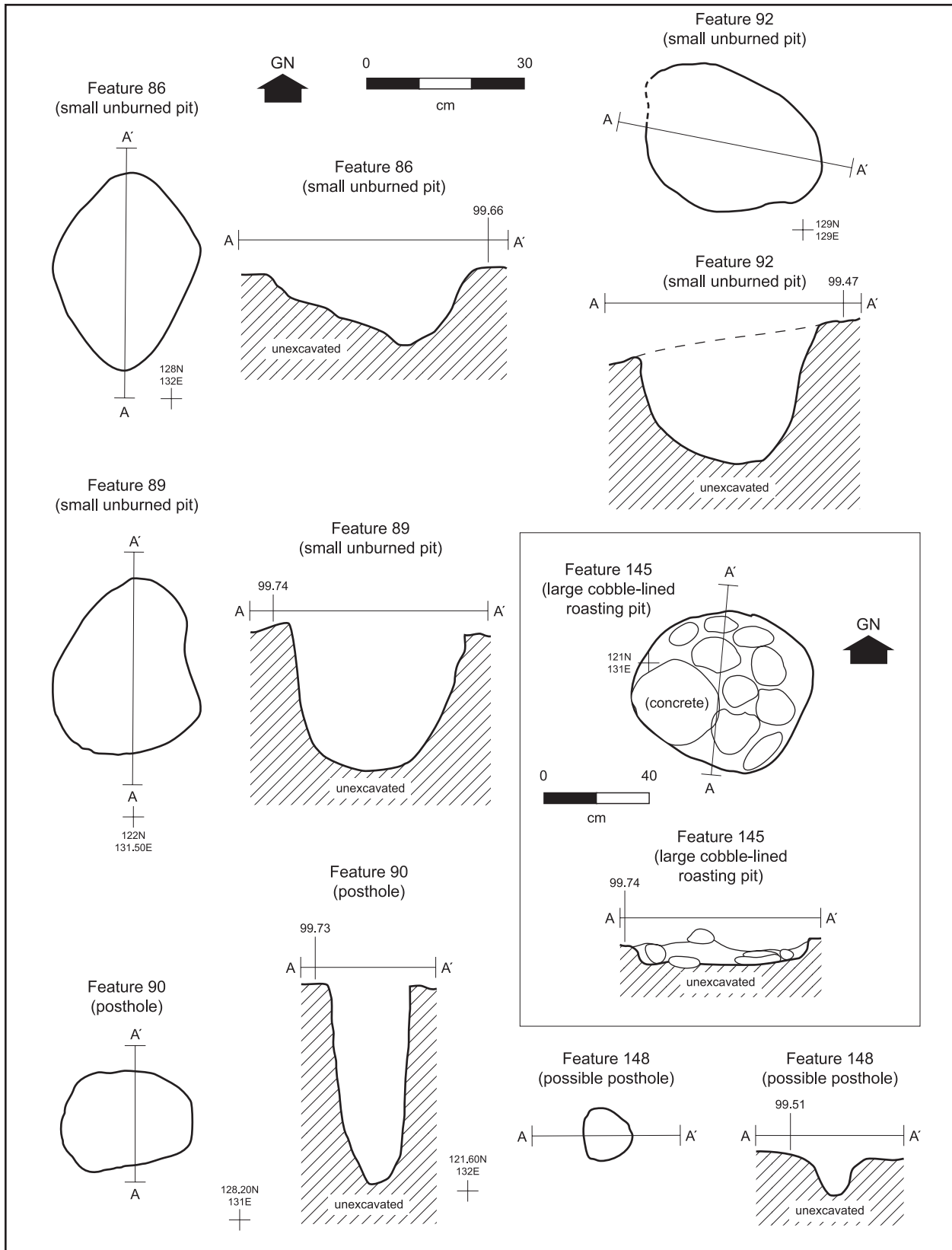


Figure 12.90. Study Unit 8, Features 86, 89, 90, 92, 145, 148.

Table 12.57. LA 6169, Study Unit 8, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
86	Small unburned pit	127N/132E	38 X 28 X 14	Stratum 1	Small, moderately steep-walled, basin-shaped pit. Filled with secondary deposit. No feature function or date assigned.
89	Small unburned pit	128N/131E	34 x 28 x 28	Yellowish brown (10YR 5/4) sandy loam with sparse charcoal flecks.	Small, steep-walled, basin-shaped pit. Filled with secondary deposit. No feature function or date assigned.
90	Posthole	128N/130E	26 X 19 X 39	Yellowish brown (10YR 5/4) sandy loam with sparse charcoal flecks.	Narrow diameter, steep-walled pit. No evidence of burning. Excavator suggests it is a posthole. No date assigned. Ceramics may result from secondary deposition.
92	Small unburned pit	129N/129E	34 X 29 X 26	Yellowish brown (10YR 5/4) sandy loam with sparse charcoal flecks.	Small, steep-walled pit that was basin-shaped. No evidence of burning. Artifacts are redeposited. No function or date assigned.
145	Large cobble-lined roasting pit	120N/131E	74 X 63 X 10	Very dark gray (10YR 3/1) fine grained sandy loam with dispersed charcoal flecks.	This basin-shaped feature This basin-shaped feature was filled with charcoal-infused sandy loam. The charcoal-infused soil covered a layer of cobbles that lined the feature floor. The cobbles exhibited evidence of burning. Feature was truncated by modern metal post installation. No date assigned to the feature.
148	Possible posthole	121N/132E	11 X 10 X 4	Black (10YR 2/1) charcoal-infused sandy loam.	Small, steep-walled shallow pit. No evidence of burning. Excavator suggests that it may be a posthole. No date assigned.
151	Large burned pit	119N/137E	85 (est.) X 84 X 10	Two layers. Upper 5 cm of light yellowish brown (10YR 6/4) consolidated sandy clay. Lower 5 cm of yellowish brown (10YR 5/4) sandy loam that is lightly charcoal stained.	Shallow basin-shaped pit. Shallow basin-shaped pit. Fill contained charcoal and oxidized soil indicating the feature may have been burned. It was located on top of the east wall of F. 47, probable Late Developmental period feature.
155	Small burned pit within Feature 151	119N/137E	42 X 32 X 18	Dark brown (10YR 3/3) sandy loam with pockets of dark gray charcoal-infused soil.	Small burned pit with steep-sides and a basin shaped bottom. Excavator inferred that this pit was burned from the dark soil patches. Feature may date to the Late Developmental period.

small sample size limits interpretations relative to subsistence and extramural activities.

## Study Unit 9

Study Unit 9 was assigned to the northern portion of Area 2 as defined by Grids 130–142N and 127–144E. Hand excavations defined the depth and ceramic age of the cultural deposit and assessed the potential for buried features. In most areas the deposit was 20 cm thick with rapidly decreasing artifact frequencies below the 20 cm level. Excavation revealed three

extramural features. Mechanical scraping exposed all the features found in Study Unit 9. Mechanical scraping removed the majority of Stratum 1 to the top of Stratum 2, which was identified as the old ground surface over a large portion of Study Unit 9. This extensive scraping failed to yield additional thermal or storage features or pit structures.

Study Unit 9 feature descriptions are provided in Table 12.60. Figure 12.91 shows the plan and profiles for Features 91, 126, and 127. Features 126 and 127 are atypical for LA 6169 extramural features because of their large size.

Table 12.58. LA 6169, Study Units 8 and 9, Extramural Areas and Sheet Trash, Lithic Artifact Type by Material Type

	Material Group										Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		N	%
	N	%	N	%	N	%	N	%	N	%		
Angular Debris	10	41.7	1	4.2	-	-	-	-	13	54.2	24	20.0
Flake	40	46.5	1	1.2	1	1.2	9	10.5	35	40.7	86	71.0
Flake, Bifacial Thin	-	-	-	-	-	-	1	100.0	-	-	1	<1
Flake, Sharpening	-	-	-	-	-	-	2	100.0	-	-	2	1.0
Tested Rock	1	100.0	-	-	-	-	-	-	-	-	1	<1
Core, Multiplatform	1	100.0	-	-	-	-	-	-	-	-	1	<1
Angular Debris, Util	-	-	-	-	-	-	1	100.0	-	-	1	<1
Flake, Utilized	2	100.0	-	-	-	-	-	-	-	-	2	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	<1
Biface	-	-	-	-	-	-	1	100.0	-	-	1	<1
Total	54	45.0	2	1.7	1	0.8	15	12.5	48	40.0	120	100.0

Table 12.59. LA 6169 SU 8 and 9 Fauna Summary by Feature

	Feature 89		Feature 92		Feature 127		Feature 145		Total	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Small mammal	1	50.0%	1	100.0%	2	20.0%	-	-	4	28.6%
Small-medium mammal	-	-	-	-	1	10.0%	-	-	1	7.1%
Large mammal	1	50.0%	-	-	7	70.0%	-	-	8	57.1%
Mule deer	-	-	-	-	-	-	1	100.0%	1	7.1%
Total	2	100.0%	1	100.0%	10	100.0%	1	100.0%	14	100.0%
Immature	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Burned	1	50.0%	-	-	-	-	-	-	1	7.1%
>75% complete	-	-	-	-	-	-	1	100.0%	1	7.1%
<25% complete	2	100.0%	1	100.0%	10	100.0%	-	-	13	92.9%

Feature 126 was a large, moderate- to steep-sided unburned pit that may have been used for storage. It was naturally filled with Stratum 2. It was the deepest pit with the greatest volume found within LA 6169. It was located 17 m north of Structures 47/76. The pit fill yielded Santa Fe and Kwahe'e Black-on-white sherds, suggesting that it was used sometime during the late 1100s or early 1200s. If it was a large storage pit, Feature 126 was the only extramural example found from any period within the excavated portion of LA 6169. Pollen analyzed from Feature 126 did not provide conclusive functional evidence (Chapter 24).

Feature 127 was a large, basin-shaped burned pit. In size it was similar to Features 79 and 134, which were used during the Early or

Late Developmental periods. Feature 127 is in a remote location within Area 2 as was Feature 134. These large features may have been used in large-scale processing or roasting that required open-space for stockpiling resources, wood, and for movement around the feature. Feature 127 yielded a low frequency of annual seeds and *Zea mays* (see Chapter 23, McBride and Toll). Feature 127 also yielded seven large mammal bones suggesting limited deposition of post-consumption bone. The bone was not burned indicating that it entered the feature in the absence of an active fire.

**Study Unit 10.** Study Unit 10 was assigned to the northwest portion of Area 1 as defined by Grids 90-105N/84-90E and as shown in Figure 12.2. Backhoe and hand excavations within

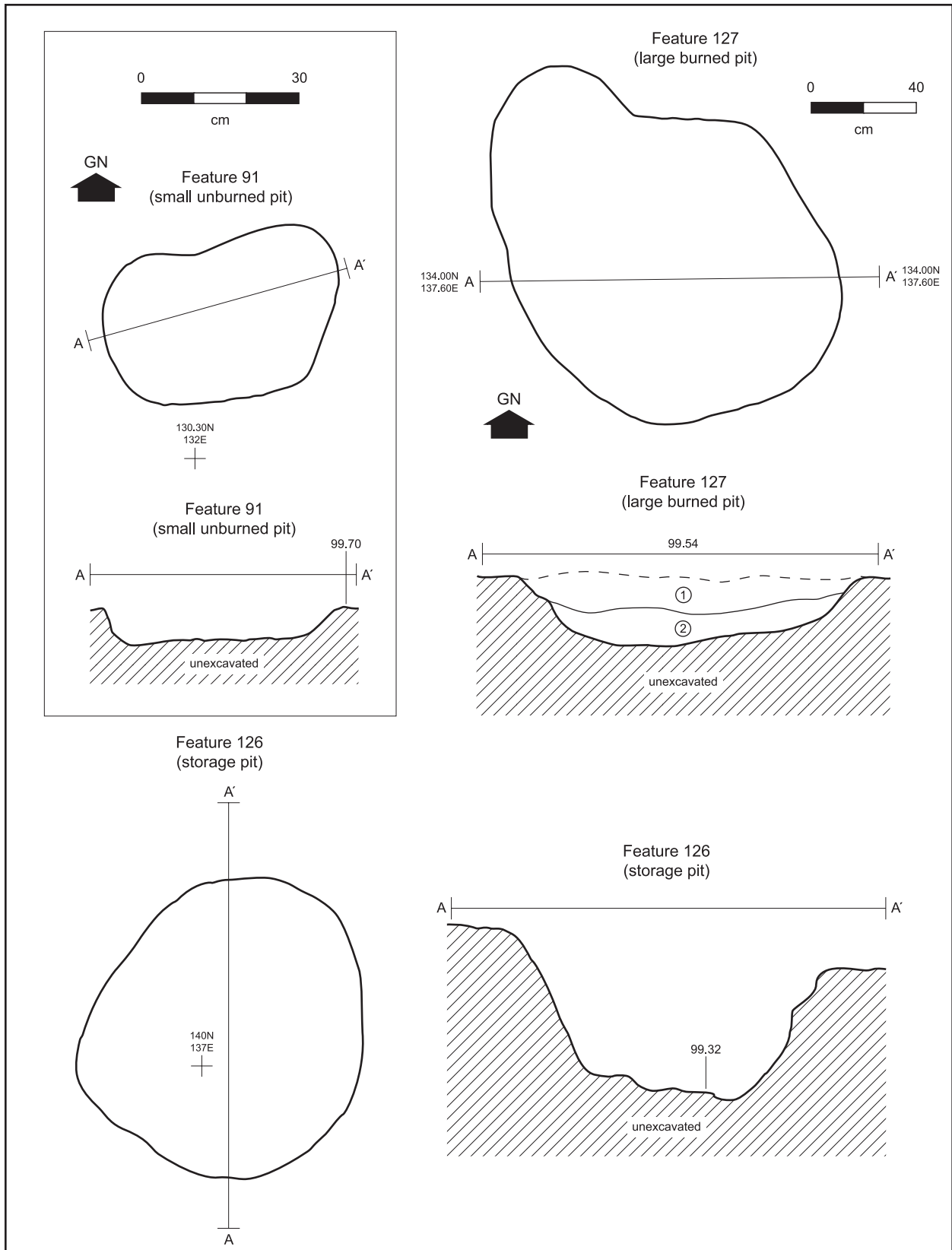


Figure 12.91. Study Unit 9, Features 91, 126, 127, plan and profile.

Table 12.60. LA 6169, Study 9, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
91	Small unburned pit	130N/132E	44 X 34 X 6	Dark brown (10YR 4/3) sandy loam.	This shallow, irregular outlined, basin-shaped pit showed no evidence of burning, but did contain charcoal-infused fill. No function or age could be assigned to the feature.
126	Storage pit	141N/131E	123 X 114 X 60	Pale brown (10YR 6/3) sandy loam with less than 1 percent gravel, sparse charcoal.	This large, deep unburned pit showed no evidence of burning. It was naturally filled as indicated by the low frequency of refuse. Size and depth suggest it was used for storage. Of interest is its distant location from any structures. It was 17 m north of F. 47/76 structures. Ceramics provide inconclusive dates, possible Late Developmental or Coalition period use on presence of Kwahe'e and Santa Fe Black-on-white pottery.
127	Large burned pit	134N/138E	127 X 115 X 24	Two layers with the upper 14 cm of brown (10YR 5/3) sandy loam with widely dispersed charcoal. Lower 14 cm is very dark grayish brown (10YR 3/2), charcoal-infused sandy loam.	Large basin-shaped pit was not obviously burned. This lower deposit may be a diffused primary burned fill. Low intensity burning is suggested by the lack of thermally altered walls and floor. Ceramics recovered from the fill suggest an Early or Late Developmental period use.

Study Unit 10 yielded Structure 70, but no extramural features. Except for Structure 70, it appears that Study Unit 10 was a low intensity, extramural area throughout the site's history. Hand excavations focused on determining the depth and ceramic age of the cultural deposit and to assess the potential for buried features exposed in the profile of Backhoe Trench 2. Hand excavation in a 4-by-2-m area north of Structure 70 encountered a mixed cultural deposit (Stratum 1). In most areas, the deposit was 20- to 23-cm-thick with rapidly decreasing artifact frequencies below the 20-cm level. The soil was slightly charcoal stained indicating a diffuse sheet-trash deposit. Artifact counts ranged between 30 and 70 sherds, chipped stone, and occasional bone. Mechanical scraping of Study Unit 10 failed to yield additional features. Amorphous charcoal-infused stains embedded in Stratum 2 proved to be rodent burrows when examined by hand excavation. In addition to being used as open space, the

artifact distribution and ceramic manufacture dates indicate that Study Unit 10 was used as a refuse disposal area for Coalition period site occupants.

Table 12.21 and 12.61 provide the ceramic and lithic assemblage data from the extramural area around Structure 70. Only a sample of the excavated units were included in the artifact analyses. Twenty-nine sherds and 87 lithic artifacts were analyzed.

The ceramic assemblage consisted mainly of Coalition period sherds including Santa Fe Black-on-white and Middle and Northern Rio Grande Plain and Indented corrugated pottery. The pottery is part of a domestic sheet-trash deposit that accumulated during the occupation of the pit rooms and surface structure.

Eighty-seven lithic artifacts were recovered from Study Unit 10, an extramural area and sheet trash (Table 12.61). The majority were manufactured from chert (33 percent), nonvesicular igneous materials (31 percent),

Table 12.61. LA 6169, Study Unit 10 Extramural Area and Sheet Trash, Lithic Artifact Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other" Non-local			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	5	25.0	8	40.0	1	5.0	-	-	5	25.0	1	5.0	20	22.0
Flake	17	27.0	19	30.2	1	1.6	3	4.8	22	34.9	1	1.6	63	72.0
Core, Multiplatform	1	50.0	1	50.0	-	-	-	-	-	-	-	-	2	2.0
Angular Debris, Marginal Retouch	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Flake, Utilized	1	100.0	-	-	-	-	-	-	-	-	-	-	1	1.0
<b>Total</b>	<b>24</b>	<b>27.6</b>	<b>29</b>	<b>33.3</b>	<b>2</b>	<b>2.3</b>	<b>3</b>	<b>3.4</b>	<b>27</b>	<b>31.0</b>	<b>2</b>	<b>2.3</b>	<b>87</b>	<b>100.0</b>

and chalcedony (28 percent). Low frequencies of Jemez obsidian (n = 3), quartzite (n = 2), and nonlocal Grants obsidian (n = 2) were also represented.

The assemblage indicates an emphasis on later stages of core reduction but also exhibits some evidence of primary decortication. Seventy-two percent of the whole flakes lack dorsal cortex but 10 percent exhibit 100 percent dorsal cortex. A single nonvesicular igneous flake with a retouched platform indicates that a bifacial tool was manufactured in the area. Two multiplatform cores manufactured from chert and chalcedony were also recovered.

Unutilized flakes (72 percent) and unutilized small angular debris (22 percent) make up the majority of the assemblage. Two expedient flake tools were recovered from this provenience. A utilized chalcedony flake exhibits unidirectional wear typical of scraping on hard media like bone or wood. A marginally retouched piece of small angular debris lacks evidence of utilization and does not exhibit a complete functional edge. It is likely that this tool was never used. No ground stone was recovered.

**Study Unit 11.** Study Unit 11 was assigned to the northeast portion of Area 1 as shown in Figure 12.2. Study Unit 11 subsumed portions of Study Units 3 and 5 as initially defined during surface collection. North portions of Backhoe Trenches 1, 2, and 3 were included in Study Unit 11. Feature 2, an adult human female burial was exposed in Backhoe Trench 1

along the NM 22 roadcut at the east limit of Area 1. No other features were observed in the Backhoe Trench 1 profile and most of the area to the west was investigated by hand and mechanical excavation. Other hand excavations focused on determining the depth and ceramic age of the cultural deposit and to assess the potential for buried features exposed in the profiles of Backhoe Trenches 2 and 3. Stratigraphic anomalies in Backhoe Trench 3 required additional subsurface investigation. A 7-by-2-m grid strip was excavated along the west wall of Backhoe Trench 3. Ranging from 10 to 50 cm deep, the units encountered heavily disturbed Stratum 1 penetrated by heavy rodent burrowing and no evidence of subsurface features. Low to moderate artifact densities indicated a low intensity sheet trash deposit similar to that exposed in Study Unit 10. Once, this preliminary excavation failed to yield features or bounded cultural deposits, mechanical scraping removed all but the lower 5 cm of Stratum 1 from all of Study Unit 11. The lowest 5 cm of Stratum 1 that still covered Stratum 2 occupation surface was hand excavated and screened revealing Features 57 and 60. Refuse recovered from these excavations indicated that sheet trash deposit dated to all three temporal components defined in the ceramic analysis.

After hand-stripping to the top of Stratum 2 a second pass of a mechanical scraper was made to ensure that no major features had been missed. From this pass, one more thermal feature, Feature 124 was exposed.

Table 12.62. Extramural Features in Study Unit 11, Area 1

Feature No.	Type	Location	Dimensions (LWD in cm)		Fill	Comments
2	Human burial	94N/102E			Burial pit was excavated into a dense, coarse-grained layer of sand and gravel.	Adult female buried with 3 vessels and a jet pendant.
57	Unburned pit	95N/97E	57 X 56 X 14		Yellowish brown (10YR 5/4) sandy loam.	Shallow basin-shaped unburned pit. Fill was redeposited Stratum 1. Associated with a halo of fire-cracked rock and Coalition period pottery.
60	Small burned pit	97N/98E	43 X 42 X 10		Yellowish brown (10YR 5/4) sandy loam with highly dispersed charcoal flecks. There is a 5 cm lense of dark gray (10YR 4/1) sandy loam that is a mixed primary deposit.	Small basin-shaped burned pit with four cobbles on the floor that may have functioned as a pot rest. Located near F. 57 and may be part of same activity.
64	Large unburned pit	98N/94E	55 X 53 X 18		Yellowish brown (10YR 5/4) sandy loam.	Shallow, but steep walled, pit with a flat bottom. Fill is a mix of Stratum 1 and primary. No evidence of burning.
124	Small unburned pit	96N/98E	37 X 36 X 6		Yellowish brown (10YR 5/4) sandy loam.	Shallow, basin-shaped pit. Fill is redeposited Stratum 1. No evidence of burning. Feature was reduced by road grader scraping. Associated ceramics suggest Coalition period date.

Table 12.63. LA6169, Study Unit 11 Extramural Area and Sheet Trash, Lithic Artifact Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other"			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	2	8.0	17	68.0	-	-	-	-	6	24.0	-	-	25	25.0
Flake	6	9.4	35	54.7	4	6.3	2	3.1	17	26.6	-	-	64	65.0
Core, Multiplatform	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Core, Single Platform	-	-	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Angular Debris, Utilized	-	-	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Angular Deb, Marg Ret	-	-	-	-	-	-	-	-	-	-	1	100.0	1	1.0
Flake, Utilized	-	-	1	33.3	1	33.3	-	-	1	33.3	-	-	3	3.0
Grinding slab	-	-	-	-	1	100.0	-	-	-	-	-	-	1	1.0
Total	8	8.2	54	55.7	6	6.2	3	3.1	25	25.8	1	1.0	97	100.0

Features excavated in Study Unit 11 are described in Table 12.62. Locations are shown in Figure 12.2. Feature plan and profiles are shown as Figure 12.92.

Features in Study Unit 11 were relatively scattered and informal. Except for Feature 2, the human burial, the features consisted of three unburned and one burned pit without specialized morphology or contents. Function for these features was difficult to infer because of the poor preservation of ethnobotanical remains and a general absence of associated artifacts that related to feature use.

Feature 2 was exposed in the east wall of

Backhoe Trench 1 within 94N/102E. The interment had been impacted by previous road construction and maintenance that had removed the upper portions of the associated vessels and portions of the skeleton. The skeleton and vessels were exposed at 10 cm below the modern ground surface. This 45+ year-old adult female was interred in an oblong pit that measured 80 cm long east-west by 60 cm wide north-south and 25–30 cm deep. The pit was excavated into a poorly consolidated, coarse Pleistocene gravel lens. There was no obvious pit preparation or covering. The adult female was lying on her right side in a tightly flexed position with her



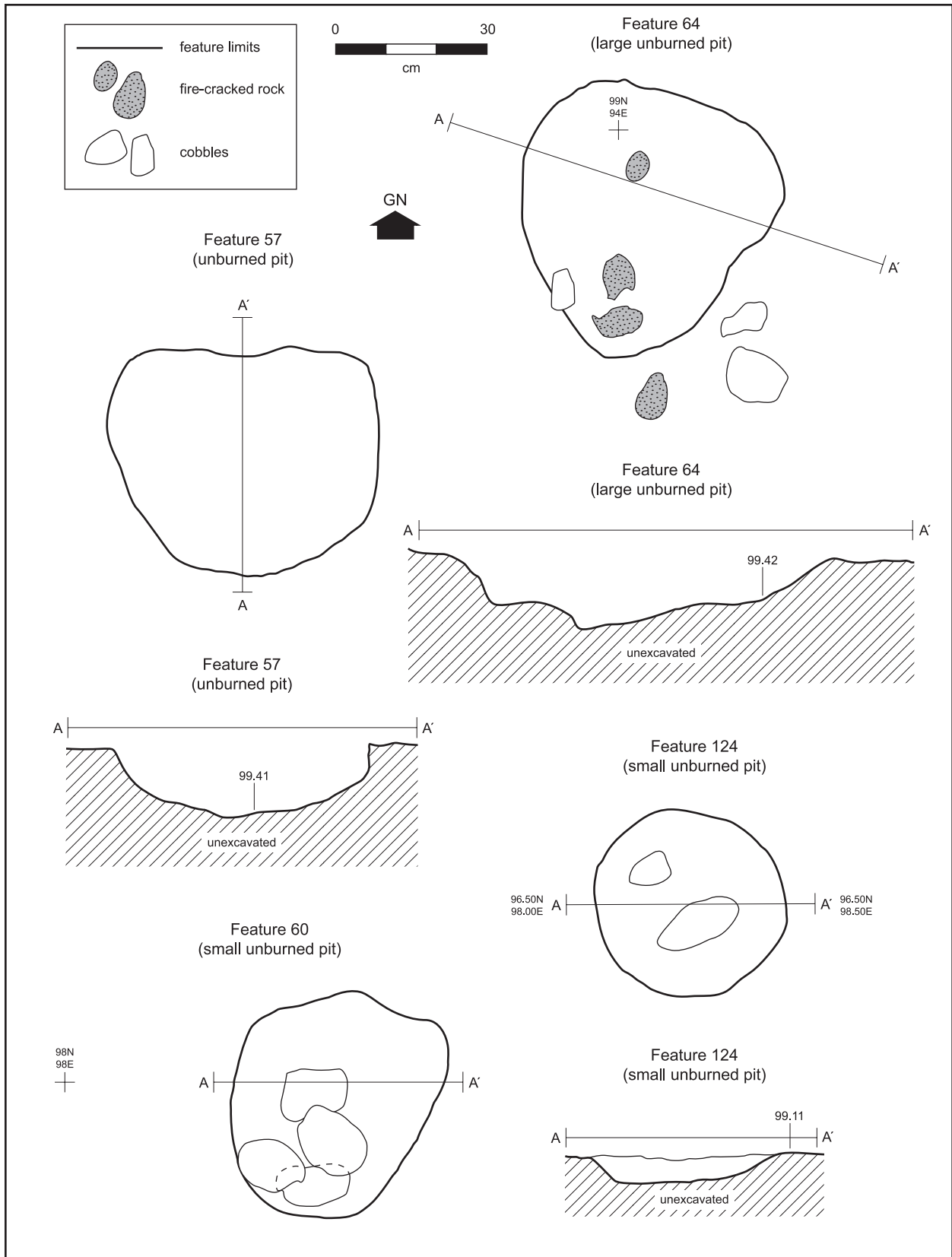


Figure 12.92. Study Unit 11, Features 57, 60, 64, 124.

head oriented to the southwest or west. This burial was unusual for the Early Developmental period at LA 6169 because three ceramic vessels and a jet pendant were associated. The vessels were a fugitive red olla, a Middle Rio Grande Plain gray, but sooted jar, and a White Mound Black-on-white seed jar. These vessels are described and illustrated in the Ceramic section (see C. D. Wilson, Chapter 16). The jet pendant was placed on or near the pelvis. This shaped ornament measured 7 cm long by 6 cm wide. This was a one-of-a-kind item for LA 6169. Vessels were also interred with older women found at LA 265 and LA 115862.

Artifacts recovered from within the features reflect the overall sheet trash distributions (Tables 12.51, 12.63). Features and artifacts occur within a 20- to 30-cm layer of Stratum 1. The sheet trash is dominated by a mix of Coalition and Early and Late Developmental pottery. The predominance of Middle Rio Grande utility wares could indicate that the majority of the refuse is from the Early Developmental and Coalition periods. Only four pieces of animal bone were analyzed from Study Unit 11 extramural contexts.

Ninety-seven lithic artifacts were recovered from an extramural area and sheet trash (Study Unit 11). The majority were manufactured from chert (56 percent) and nonvesicular igneous materials (26 percent). Low frequencies of chalcedony ( $n = 8$ ), quartzite ( $n = 6$ ), and Jemez obsidian ( $n = 3$ ) were also represented.

The chipped stone assemblage reflects an emphasis on later stages of secondary core reduction. Eighty-seven percent of the whole flakes lack dorsal cortex and 65 percent of flakes with platforms are single faceted. No evidence of formal tool manufacture was recovered from this area. A single-platform core manufactured from chert and a multiplatform core manufactured from nonvesicular igneous material indicate that secondary core reduction occurred in the area.

Unutilized flakes (65 percent) and unutilized small angular debris (25 percent) compose the majority of the assemblage. Five expedient tools were recovered from this area.

Three utilized flakes are manufactured from quartzite, chert, and nonvesicular igneous material. Two exhibit unidirectional wear typical of use on hard media like bone or wood, and the third exhibits bidirectional rounding and striations consistent with prolonged cutting or sawing on a hard medium. A utilized piece of angular debris, manufactured from obsidian, also exhibits unidirectional scraping wear on a hard surface. A marginally retouched piece of angular debris lacks evidence of use but exhibits two functionally complete retouched edges. It is likely these edges were used but do not have wear patterns that can be identified using 60x magnification.

**Study Unit 12.** Study Unit 12 is in the southwest portion of Area 1. It includes Structure 10 and its extramural area as well as an extramural area 7 m to the south that may not be temporally associated. Study Unit 12 covers 59-79N/84-90E. Hand excavation focused on stripping Stratum 1 from the area to the north and east of Structure 10. Hand stripping revealed no extramural features, except for Feature 18, which was immediately west of Structure 10. The Pleistocene channel deposit exposed in all backhoe trenches covered a substantial portion of Grids 71-79N/88-90E. Stripping halted when Stratum 3 was exposed. Low to moderate frequencies of artifacts were recovered from this area. Most of the artifacts indicated the presence of a Coalition period sheet trash deposit that could have been associated with the Structure 10, Structure 15, or Structure 16 occupations.

Mechanical stripping of Study Unit 12 exposed a concentration of postholes 7 m south of Structure 10. The postholes were exposed on the east edge of the Stratum 3 channel deposit excavated into the shallow Stratum 2 deposit that overlaid Stratum 4. The posthole cluster may have been the remains of a ramada or shade shelter. Artifacts associated with the feature cluster were mixed and did not indicate a distinct time period.

Study Unit 12 features are listed in Table 12.64. Feature plan and profiles are shown as

Table 12.64. Extramural features, Study Unit 12, Area 1

Feature		Type	Dimensions (LWD in cm)	Comments
No.	Location			
138	64N/86E	Extramural activity area or ramada	6.0 m X 6.0 m	Occupation surface with many postholes and lightly charcoal-infused soil. Very low artifact counts indicate a use area rather than a refuse area. Area is at the far southern edge of the Area terrace. Associated ceramics suggest an Early Developmental date, though temporal associations are tenuous.
135	65N/87E	Posthole	10 X 10 X 7	
136	65N/86E	Posthole	12 X 12 X 6	
137	64N/86E	Posthole	16 X 15 X 7	
141	60N/86E	Possible pot rest	22 X 19 X 5	
142	65N/84E	Double posthole	5 X 5 X 9; 5 X 5 X 3	May be part of superstructure for shade shelter that covered F. 138 activity area.
143	63N/86E	Posthole	13 X 9 X 8	

Figures 12.93 and 12.94.

Artifacts recovered and analyzed from the Structure 10 extramural area reinforced the interpretation that Structure 10 was occupied and abandoned during the Coalition period. Tables 12.65 and 12.66 show the ceramic distributions for Study Unit 12, Area 1. Table 12.67 shows lithic artifact data for this area.

The ceramic assemblage is dominated by Santa Fe Black-on-white and Middle Rio Grande utility wares. This combination of white and gray wares is typical of all Coalition period deposits from pit room floors and structure fill. Clearly this intervening area between the Coalition period pit structures was used as a Coalition period dump.

Three hundred and twenty-six lithic artifacts were recovered from an extramural area with refuse (Study Unit 12). The majority were manufactured from nonvesicular igneous materials (39 percent), chert (33 percent), and chalcedony (19 percent). Low frequencies of Jemez obsidian (n = 11), quartzite (n = 9), and "other" local material (n = 1) were also represented.

The lithic assemblage indicates an emphasis on later stages of secondary core reduction

and formal tool manufacture. Eighty-three percent of the whole flakes lack dorsal cortex, 53 percent of flakes with platforms are single-faceted, and 19 percent exhibit collapsed platforms. There is little evidence for primary decortication in this area. Evidence for bifacial tool manufacture occurs within four material categories. Flakes with retouched platforms were manufactured from chert (n = 3), obsidian (n = 3), chalcedony (n = 1), and quartzite (n = 1).

Unutilized flakes (56 percent) and unutilized small angular debris (36 percent) make up the majority of the assemblage. All nine tools recovered from this area were expedient, consisting of six utilized flakes, pieces of two small fragments of angular debris, and three marginally retouched flakes. All tools, with the exception of one piece of angular debris, exhibit unidirectional wear consistent with scraping on hard media like bone or wood, on at least one edge. Two use edges were battered as well. One fragment of small angular debris exhibited rounding with striations more consistent with prolonged cutting use.

Additional artifacts recovered from this extramural area are two complete stone balls

Table 12.65. LA 6169, Study Unit 12, Area 1, Study Unit 13, and Upper Fill, Structure 4, Pottery Type Distribution

	150, Upper Fill Feature 4 Pit Structure	151 SU 12 Extramural Area and Refuse	152 SU 13 Features and Sheet Trash	Total
201 Unpainted undifferentiated	17	18	3	38
	5.5%	5.9%	4.1%	5.5%
Santa Fe B/w	15	34	8	57
	4.9%	11.1%	10.8%	8.3%
Galisteo B/w	6	-	-	6
	1.9%			0.9%
Unpainted (Galisteo paste)	2	-	-	2
	0.6%			0.3%
NRG Plain body	3	4	-	7
	1.0%	1.3%		1.0%
NRG Indented Corrugated	-	1	-	1
		0.3%		0.1%
NRG Plain Corrugated	-	1	1	2
		0.3%	1.4%	0.3%
MRG Plain rim	5	2	1	8
	1.6%	0.7%	1.4%	1.2%
MRG Unknown rim	-	5	-	5
		1.6%		0.7%
MRG Plain body	160	133	45	338
	51.9%	43.3%	60.8%	49.1%
MRG Wide Neckbanded (wiped)	1	-	-	1
	0.3%			0.1%
MRG Indented Corrugated	6	14	1	21
	1.9%	4.6%	1.4%	3.0%
MRG Plain Corrugated	43	34	2	79
	14.0%	11.1%	2.7%	11.5%
MRG Smearred Plain	24	33	9	66
Corrugated	7.8%	10.7%	12.2%	9.6%
MRG Smearred Indented	3	13	1	17
Corrugated	1.0%	4.2%	1.4%	2.5%
MRG Polished gray	1	1	-	2
	0.3%	0.3%		0.3%
MRG Unpainted undifferentiated	8	4	-	12
	2.6%	1.3%		1.7%
MRG Mineral Paint (undiff)	2	4	-	6
	0.6%	1.3%		0.9%
San Marcial B/w	2	3	2	7
	0.6%	1.0%	2.7%	1.0%
MRG Slipped Red over white paste (Tallahogan-like)	10	1	1	12
	3.2%	0.3%	1.4%	1.7%
Slipped over red paste	-	1	-	1
		0.3%		0.1%
Alma Plain rim	-	1	-	1
		0.3%		0.1%
Total	308	307	74	689
	100.0%	100.0%	100.0%	100.0%

Table 12.66. LA 6169, Study Unit 12, Feature 138  
Area Ceramic Types

	Frequency	Percent
Unpainted undifferentiated	1	2.2
Kwahe'e B/w (hatched designs)	1	2.2
MRG Plain body	35	76.1
MRG Smear'd Plain Corrugated	1	2.2
MRG Smear'd Indented Corrugated	4	8.7
Unpainted undifferentiated	1	2.2
Mineral Paint (undiff.)	1	2.2
Slipped Red over white paste (Tallahogan-like)	1	2.2
Jornada Brown body	1	2.2
Total	46	100

manufactured from fine-grained rhyolite.

Study Unit 12, Feature 138, was a cluster of six postholes in a linear arrangement within an irregular occupation stain. Although definite limits were not identified, this area may have housed a ramada. Feature 138 is estimated to cover a 6 m north-south by 5.5 m area east-

west. No features besides the postholes were encountered. No absolute dates were derived from this area.

Tables 12.66 and 12.67 provide the artifact distributions for Feature 138. The 46 sherds recovered from this area are mixed temporally and include Kwahe'e Black-on-white and Tallahogan-like Red Ware. The utility wares are Middle Rio Grande Plain and Corrugated with anthill sand and sand/sandstone temper. The type and temper distribution represent Early and Late Developmental and Coalition period components.

One hundred and sixty-one lithic artifacts were recovered from postholes (Table 12.68). The majority of the artifacts were manufactured from chert (42 percent), nonvesicular igneous materials (41 percent), and chalcedony (14 percent). Five artifacts of Jemez obsidian

Table 12.67. LA 6169, Study Unit 12, Extramural Area and Refuse, Lithic Artifact Type by Material Type

	Material Group												Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		"Other" Local			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Angular Debris	15	18.3	25	30.5	-	-	2	2.4	40	48.8	-	-	82	36.0
Flake	24	18.8	46	35.9	7	5.5	6	4.7	44	34.4	1	0.8	128	56.0
Tested Rock	-	-	-	-	-	-	-	-	1	100.0	-	-	1	<1
Core, Multiplatform	1	33.3	1	33.3	-	-	-	-	1	33.3	-	-	3	1.0
Hammerstone	-	-	-	-	1	100.0	-	-	-	-	-	-	1	<1
Angular Debris, Utilized	-	-	1	50.0	1	50.0	-	-	-	-	-	-	2	<1
Flake, Utilized	3	75.0	1	25.0	-	-	-	-	-	-	-	-	4	1.0
Flake, Marginal Retouch	-	-	-	-	-	-	3	100.0	-	-	-	-	3	1.0
Stone Ball	-	-	-	-	-	-	-	-	2	100.0	-	-	2	<1
Total	43	19.0	74	32.7	9	4.0	11	4.9	88	38.9	1	0.4	226	100.0

Table 12.68. LA 6169, Study Unit 12, Postholes

	Material Group								Grouped Material Totals	
	Chalcedony		Chert		Jemez Obsidian		Nonvesicular Igneous			
	N	%	N	%	N	%	N	%	N	%
Angular Debris	4	7.7	28	53.8	1	1.9	19	36.5	52	32.0
Flake	17	16.3	38	36.5	3	2.9	46	44.2	104	64.0
Flake, Bifacial Thin	1	100.0	-	-	-	-	-	-	1	<1
Core, Multiplatform	-	-	1	100.0	-	-	-	-	1	<1
Flake, Utilized	-	-	1	50.0	1	50.0	-	-	2	1.0
Flake, Marginal Retouch	-	-	-	-	-	-	1	100.0	1	<1
Total	22	13.7	68	42.2	5	3.1	66	41.0	161	100.0

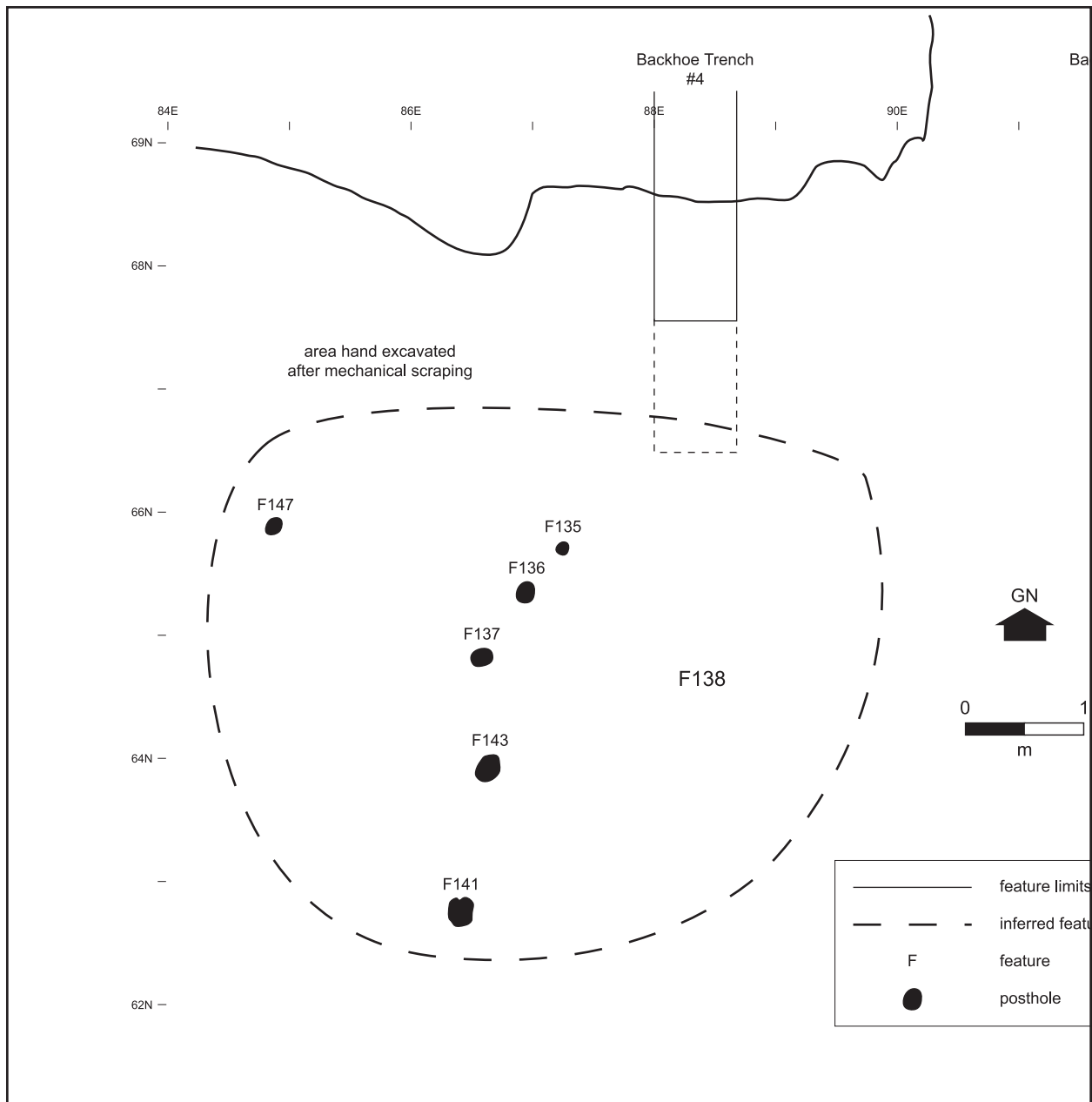


Figure 12.93. Study Unit 12, Feature 138 plan.

were found as well.

The assemblage exhibits an emphasis on later stages of secondary core reduction and 83 percent of the whole flakes lack dorsal cortex. Seventy-six percent of the flakes exhibited either single-facet (61 percent) or collapsed (15 percent) platforms. Retouched platforms indicating bifacial tool manufacture were identified in the chalcedony ( $n = 2$ ) and chert ( $n = 3$ ) material categories. A chert multiplatform core was also recovered.

Unutilized flakes (64 percent) and unutilized small angular debris (32 percent) make up the majority of the assemblage. Two expedient flake tools, manufactured from chert and obsidian, exhibit unidirectional wear typical of scraping on hard media like bone or wood. A marginally retouched flake manufactured from nonvesicular igneous material exhibits unidirectional retouch on three edges but lacks evidence of utilization. Two edges appear functionally complete. It is likely they were

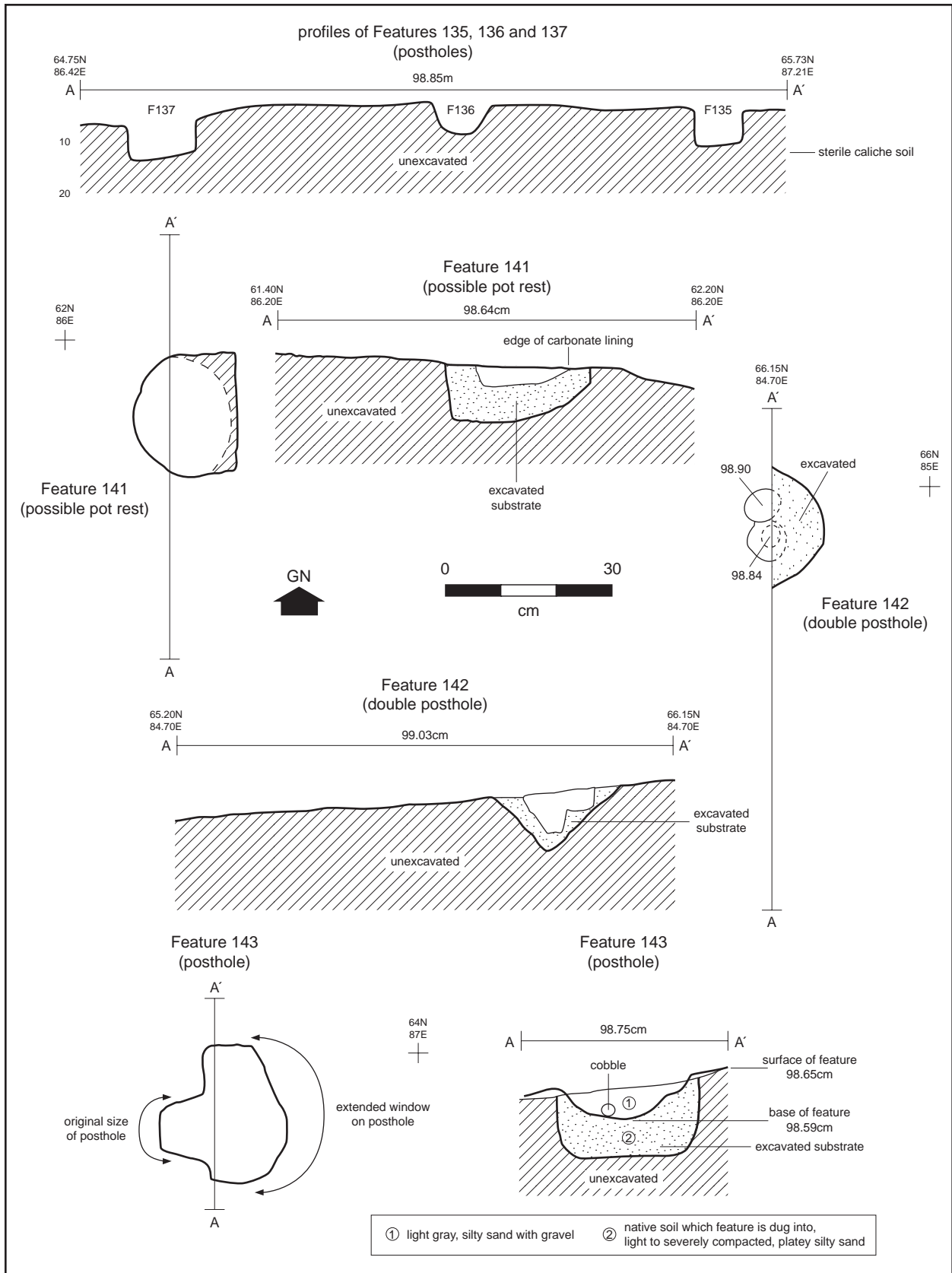


Figure 12.94. Study Unit 12, Features 135, 136, 137, 141, 142, 143, plan and profile.

used in activities that do not produce use wear that can be identified using 60x magnification. No ground stone was recovered.

Overall the artifact type distributions represent a mixed sheet trash deposit that overlies the Feature 138 area. No artifacts can be confidently associated with this activity area that would elaborate on the occupation date or function. The small size of the postholes suggest that it was a temporary structure. Such structures were reported for the larger Peña Blanca sites with primarily an Early Developmental temporal association. The spatial isolation of the feature is interesting suggesting that it remains from an occupation distinct from the other more structurally focused occupations.

**Study Unit 13.** Study Unit 13 was the southeast portion of Area 1. It included Grids 59–81N/91–100E. Surface collection, backhoe trenching, and the excavation of 81N/100E indicated a minimal cultural deposit in Study Unit 13. This area was mechanically stripped removing most of Stratum 1 to the top of Stratum 2. Mechanical stripping revealed six features including Feature 50, a large circular depression. These features were difficult to

assign to a particular occupation component because the low artifact counts include temporally mixed ceramic types.

Study Unit 13 features are listed in Table 12.69. Feature 50 is described in more detail below.

Feature 50 was a large, shallow, oval-shaped, charcoal-stained soil-filled basin that yielded low ceramic and chipped stone counts (Fig. 12.95). Initial interpretation suggested that it was a poorly developed midden, perhaps associated with Structure 4. A reappraisal of the feature suggests that it could be the initial excavation of a pit structure that was halted due to the poorly consolidated, underlying coarse sand and gravel. This initial excavation was then filled with hearth cleanings and domestic refuse. Refuse is mixed and cannot be assigned to a particular period. It may be an Early Developmental structure that was left unfinished and used to hold refuse by Late Developmental or Coalition period occupants. Artifact class frequencies are provided in Tables 12.65 and 12.70.

The pottery was mixed and Coalition period types predominated. Santa Fe Black-on-white was the main decorated type and two sherds of San Marcial Black-on-white were identified. Utility wares included Middle Rio Grande Plain

Table 12.69. LA 6169, Area 1, Study Unit 13, Feature Data

Feature No.	Type	Location	Dimensions (LWD in cm)	Fill	Comments
50	Probable midden	72-74N/95-100E	6.5 m X 5.0 m X 20	Dark yellowish brown (10YR 4/4) sandy loam with coarse sand and gravel mixed with very dispersed charcoal.	Shallow, poorly developed midden deposit with charcoal-infused soil and ceramics from Early and Late Developmental period
67	Possible posthole	81N/98E	15 X 15 X 6	Yellowish brown	Steep-walled, shallow, small pit may be
71	Possible posthole	80N/97E	18 X 18 X 13	Yellowish brown (10YR 5/4) blocky sandy loam.	Unburned pit with steep walls may be a posthole remnant.
140	Isolated posthole	68/94E	26 X 24 X 30	Yellowish brown (10YR 5/4) blocky sandy loam.	Deeper and more formal posthole than F 135-137. Located 5 m east of F 138 activity area.
158	Large burned pit	69N/95E	100 X 50 (incomplete) X 10	Yellowish brown (10YR 5/4) blocky sandy loam.	Exposed by road grader reducing upper limit of pit
159	Unburned large pit	69N/93E	55 X 55 X 10	Dark brown (10YR 4/3) sandy loam with dispersed charcoal.	Unburned pit with moderately steep walls and an irregular bottom. No evidence of burning. Part of extramural activity area that is difficult to tie to a particular component.



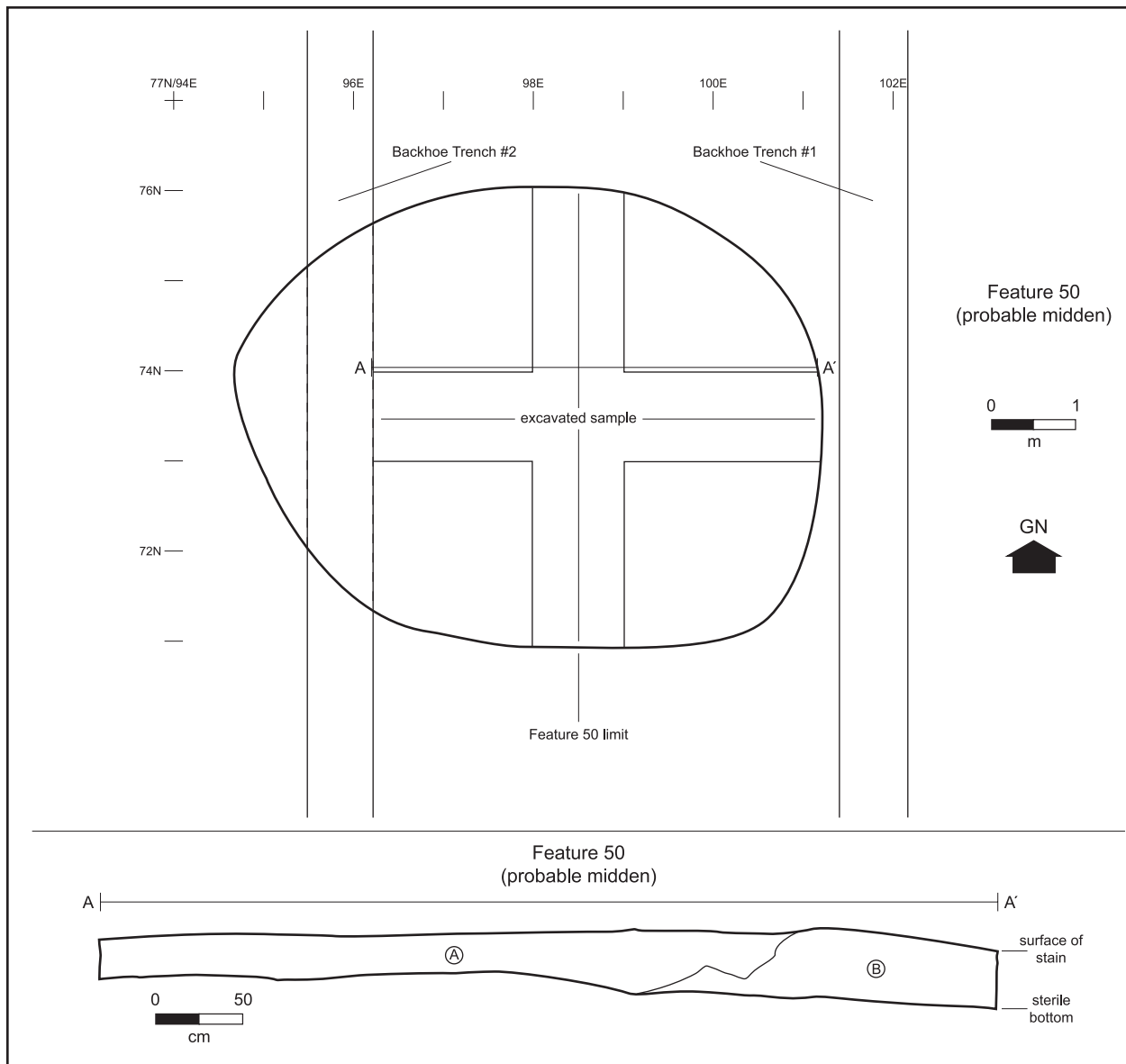


Figure 12.95. Study Unit 13, Feature 50, plan and profile.

and Corrugated with local sand/sandstone and anthill sand suggesting local manufacture and acquisition of utility wares from the Pajarito Plateau. The combined decorated and utility wares indicate that Study Unit 13 was predominantly a Coalition period activity area.

Eighty-three lithic artifacts were recovered from features and sheet trash in Study Unit 13. The assemblage was composed of chalcedony (31 percent), nonvesicular igneous materials (33 percent), chert (24 percent), and Jemez obsidian (11 percent). Only a single quartzite artifact was identified.

The assemblage indicates an emphasis on later stages of secondary core reduction. Eighty-five percent of whole flakes lack dorsal cortex and 74 percent of flakes with platforms are single-faceted. A single flake with a retouched platform provides evidence of the bifacial manufacture of a chalcedony tool. Four multiplatform cores were manufactured from chalcedony (n = 1), chert (n = 2), and nonvesicular igneous material (n = 1). It is likely that decortication occurred at another location.

Unutilized flakes (59 percent) and unutilized small angular debris (26 percent) make

Table 12.70. LA 6169, Study Unit 13, Extramural Area and Refuse, Lithic Artifact Type by Material Type

	Material Group										Grouped Material Totals	
	Chalcedony		Chert		Quartzite		Jemez Obsidian		Nonvesicular Igneous		N	%
	N	%	N	%	N	%	N	%	N	%		
Angular Debris	4	18.2	8	36.4	-	-	2	9.1	8	36.4	22	26.0
Flake	20	40.8	10	20.4	-	-	2	4.1	17	34.7	49	59.0
Tested Rock	-	-	-	-	1	100.0	-	-	-	-	1	1.0
Core, Multiplatform	1	25.0	2	50.0	-	-	-	-	1	25.0	4	4.0
Flake, Utilized	-	-	-	-	-	-	2	100.0	-	-	2	2.0
Flake, Marginal Retouch	1	100.0	-	-	-	-	-	-	-	-	1	1.0
Projectile Point	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Uniface	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Graver	-	-	-	-	-	-	1	100.0	-	-	1	1.0
Unknown Ground Stone	-	-	-	-	-	-	-	-	1	100.0	1	1.0
<b>Total</b>	<b>26</b>	<b>31.3</b>	<b>20</b>	<b>24.1</b>	<b>1</b>	<b>1.2</b>	<b>9</b>	<b>10.8</b>	<b>27</b>	<b>32.5</b>	<b>83</b>	<b>100.0</b>

up the majority of the assemblage. Six tools were recovered from the features in Study Unit 13. Two utilized obsidian tools and a marginally retouched chalcedony flake exhibit unidirectional scraping wear typical of scraping on bone or wood. The proximal base of an obsidian projectile point and an obsidian uniface were also recovered. The uniface exhibited an incomplete functional edge with unidirectional wear indicating the tool was broken during use scraping on bone or wood. An obsidian graver exhibits hard wear also resulting from working bone or wood.

A single indeterminate ground stone fragment of fine-grained rhyolite was recovered from this provenience.

#### *The Historic Component*

Outside the west right-of-way limit, west of Area 1, there was the collapsed remains of a single room cobble-walled structure. This single room structure was built after 1880 and was probably the seasonal residence for Cochiti Pueblo people that practiced irrigation farming within the Rio Grande floodplain. Few artifacts from the historic period were recovered from Area 1. The lack of artifacts suggests that refuse was deposited to the west off of the terrace, rather than to the east across the terrace. This historic component is described and discussed in more detail in the ethnohistory chapter (see L. Goodman, Chapter 7).

#### CONCLUSIONS

Excavation of LA 6169 fulfilled and exceeded the expectations of the original data recovery plan. Anticipated was the potential for Early and Late Developmental and Coalition period components. However, the number, distribution, and types of structures, extramural features, and occupation refuse and debris were more varied and complex than expected. Archaeomagnetic and radiocarbon dating methods indicate discontinuous occupation of the terrace setting for almost 600 years from the late AD 700s to the late AD 1200s or 1300s. LA 6169 Early Developmental components combine with LA 265, LA 6170, and LA 6171 to form the most comprehensive view of early settlement of the Rio Grande by agrarian populations that were ancestors to modern Rio Grande Pueblo Indians. The Late Developmental period component is compelling because it dates late in the sequence (late AD 1100s or early 1200s), and may bridge the transition into a Coalition period occupation of the area. The Coalition period components reflect changing seasonal residential strategies employed by permanent ancestral Pueblo populations, and perhaps, changes in cultural affiliation and direction of socio-economic interaction and relationships.

#### *The Early Developmental Period Component*

During the Early Developmental period,

Structures 4 and 47 were built and occupied sometime between AD 735 and 840 with archaeomagnetic intercept dates of AD 790 for Structure 4 and AD 820 for Structure 47. These dates, which were obtained from intramural thermal features, suggest that the Structure 4 occupation was followed by Structure 47, although there is some overlap in the date ranges that does not rule out contemporaneous occupations. The occupation dates place LA 6169 slightly later than the initial Early Developmental period occupations at LA 265, LA 6170, and LA 6171. At LA 265, earliest dates were from the shallow key-hole structures and not the deep, formal pit structures. This architectural difference suggests that there was a change in residential pattern after AD 700 from shallow, more ephemeral structures to more substantial and permanent pit structures. After AD 700, all sites with Early Developmental components had larger, deeper pit structures with distinct and variable intramural layouts and a wider array of extramural thermal and storage features.

Structures 4 and 47 are well within an average size range for a single-family dwelling during the Early Developmental period. Structure 4 had the majority of the floor features in the east half with a southeast orientation for the hearth, ash pit, and ventilator complex. The orientation and concentration of features in the area between the central hearth and ventilator opening was common in the River's Edge pit structures (Schmader 1994). Structure 47 may have had a similar floor space organization and did have an east orientation to the hearth, ash pit, and ventilator complex. Because Structure 76 was built into the west two-thirds of Structure 47, the interior layout of the structure is only partially known. Both structures had four-post roof support systems and Structure 47 was roofed with a combination of cottonwood, adobe, and reeds based on the burned elements. Structure 4 was unburned but contained a dense cobble deposit mixed with adobe and loam as did Structure 47. Rock and loamy soil were used as covering materials in many of the Peña Blanca Early Developmental

structures. Both structures have wall niches and Structure 47 had intramural storage pits built into the walls. Structure 4 lacked internal storage pits, unless the southeast wall had one that was removed by the construction of the Coalition period Structure 15. Extramural storage pits were not found in association with either structure.

Remodeling of intramural features was observed for the Structure 4 hearth and two of the Structure 47 postholes. Limited remodeling suggests occupation spans that were minimally determined by the lifespan of the structure building materials. Rotting posts would have posed the most significant danger with the many-ton roof weight exerting a constant and potentially crushing pressure. Temporary posts would have been installed to support roof weight while new posts were erected or supplementary weight-bearing posts were added near the main posts to lengthen their use-life. This latter scenario seems most likely for Structure 47 remodeling.

Abandonment may have followed the inability to maintain the structure integrity for safe occupation. Structure 4 was abandoned without burning. However, an antler was placed at the junction of the ventilator shaft and tunnel and a human cranium was placed on the floor in the southwest quarter in association with a bear mandible. These seem to be ritual offerings (see N. Akins, Chapters 20 and 22). Further, the middle of the structure had an accumulation of cobbles, a large basin metate, two dog interments and at least part of one disarticulated turkey carcass. The cobbles are part of the roof closing material, while the metate was intentionally placed in the middle of the structure. Whether the dogs were intentionally buried or were denning and trapped when the roof collapsed is unclear. Other domestic refuse was deposited on or near the floor at abandonment suggesting token refuse disposal, rather than concerted or sustained trash-filling.

Structure 47 also exhibited elements of ritual abandonment behavior with the placement of antler at the ventilator shaft and tunnel junction and placement of a pigment-covered mano as

well as small amounts of refuse in the ventilator tunnel. The ash pile within the structure was full of animal bone and chipped stone suggesting that the refuse was intentionally mixed with ash at abandonment. Most of the animal bone is unburned so it cannot be characterized as hearth refuse. The structure floor was partly covered with cobbles and mixed with the burned roofing wood. The secondary roofing beams were burned, but the upright posts and main cross beams were removed. This suggests salvaging of large timbers and an intentional, but not catastrophic, burning of the structure consuming the remaining wood and roofing material that could not be reused. Not every Early Developmental pit structure from the project was burned, suggesting that selective burning and the burning of remaining wood after salvage could have been ritual. This "ritual" burning was not prescribed for all structures suggesting that some structures were used as residences and for ritual purposes. Again, Structure 47 abandonment cannot be characterized as simple or mechanistic. It appears that there were a series of behaviors related to functional and ritual needs that were sequentially carried out before and as the structure was abandoned.

Once abandoned, Structures 4 and 47 filled naturally with upper fill refuse indicative of refuse mixed with a colluvial deposit that gradually accumulated. This natural accumulation occurred with sufficient speed to allow for filling of the Structure 4 ventilator shaft and Structures 4 and 47 perimeters to the point where they could be used as cemeteries. The ventilator shaft for Structure 4 and its southwest wall were used as burial locations for children. The upper northeast wall of Structure 47 was also the site of a child burial. These burials suggest that Early Developmental use of these structural spaces evolved into specialized functions. These spaces were not used for domestic or residential activities again during the Early Developmental period. However, subsequent site residents had no qualms about reusing these spaces for residential construction. This suggests that former uses of the structures, the closing rituals, and location of

graves were not known to later site residents.

Subsistence and technology reflect a conservative strategy based on use of local raw materials in ceramic and lithic production. Flake stone technology focused on an expedient reduction trajectory that produced scrapers and blades and small corner- and side-notched arrow points. Ceramic vessels were locally produced and were dominated by gray ware jars. This focus on utility wares has been interpreted as a maintainable technology for cooking and storage (see C. Dean Wilson, Chapter 16). Maintainable technology is typically associated with seasonally mobile populations, a characterization that appears to fit Peña Blanca Early Developmental residents. A relatively low frequency of other vessel forms suggest short duration occupations, a limited range of domestic and processing activities, or perhaps the use of non-ceramic containers for food consumption and processing. Surprisingly, the ground stone artifacts recovered from the structure floors and associated activity areas were few. This would seem to indicate a limited reliance on agriculture, even though its evidence is fairly ubiquitous, if not overly abundant in structures and intramural features. Combined archaeobotanical and faunal evidence indicate reliance on a broad spectrum of plant and animal resources from riparian, woodland, grassland, and montane settings. Turkeys were kept, but not domesticated. Small mammal bones were the most common suggesting a heavy reliance. However, butchering practices for large mammals may reduce bone counts, while not accurately representing consumption and reliance. By AD 900, LA 6169 was abandoned. There is little evidence of occupation during the period spanning AD 900 to 1050 or 1100. This is corroborated by the lack of ceramics dating to this span in the analyzed assemblage.

#### *The Late Developmental Period*

Ceramic evidence suggests that after Structures 4 and 47 were abandoned and reoccupation of LA 6169 did not occur until the late AD 1100s or very

early 1200s based on the archaeomagnetic date from the central hearth of Structure 76. Late Developmental period pottery types were recovered from sheet trash deposits within Areas 1 and 2 and some of these deposits may be earlier than or contemporaneous with Structure 76. Because Structure 76 was rapidly filled with a trash deposit that was loaded with Late Developmental and Early Coalition period ceramics, it is also likely that some of the sheet deposit post-dates Structure 76. For this excavation, the best dated context suggests that Late Developmental occupation occurred at the end of the twelfth or beginning of the thirteenth centuries AD.

Structure 76 was unique because it was the only Late Developmental period residential structure and it was built into the western two-thirds of Structure 47 incorporating Structure 47's original west and southwest walls. The north, east, and southeast walls were excavated into loose pit structure fill and reinforced with puddled adobe facades. The use of adobe in wall construction represented a departure from Early Developmental period techniques, which typically incorporated adobe into the hearth collar and roof construction. Interestingly, the ventilator tunnel and shaft had an eastward orientation and were dug into the pit structure fill. Because this fill was loose, the features must have been reinforced with an adobe and wood framework, though no evidence of such construction was recognized. If the ventilator had been oriented to the south, it could have been excavated into stable native soil. The east orientation suggests adherence to a pre-determined structure plan, which took precedence over the more reliable and maintainable construction within native soil.

There was a central hearth, but the remaining floor features were insubstantial suggesting the bulk of domestic and processing activities were focused outdoors. The low frequency and informal construction of the intramural features suggest seasonal occupation, probably warm weather in conjunction with farming. A low frequency of intramural features with a structure diameter ranging between 3.5 and 4.5 m was typical for Cochiti Dam Late Developmental pit structures (Lange 1968).

The construction and occupation of pit structures with very limited provision for storage or processing suggests that the Late Developmental period settlement pattern was seasonal. Nonlocal ceramic types were from the south and west suggesting trade and possibly residential/kin ties with these regions. Late Developmental period population had expanded into most of the Tewa Basin by the AD 1100s, so possible northern influences cannot be discounted. Late Developmental settlement of the Pajarito Plateau was virtually nil indicating a settlement pattern that focused on riverine settings.

Subsistence and technology reflect a conservative strategy based on the use of local raw materials in ceramic and lithic production. Flake stone technology continued to focus on an expedient reduction trajectory that produced scrapers and blades and small corner- and side-notched arrow points. While frequencies of Northern Rio Grande gray ware remained high, there was also an increase in the number and diversity of decorated vessels. Decorated water jars were more evident than for the Early Developmental or Coalition periods. This suggests a fundamental shift in pottery production or acquisition from maintainable to durable or reliable vessels. This shift is typically associated with more permanent occupation, which contradicts the observation that Structure 76 was a seasonally occupied structure. It is possible that the adherence to a reliable ceramic technology reflects a well-developed and embedded technological adaptation that superseded responses to continued or periodic mobility.

Flaked stone technology exhibited a balance between expedient and formal tools. Plant, wood, or fiber processing tools were recovered from the floor, as were hunting-related tools. Manufacture debris indicated that local raw materials were used to produce expedient and formal tools. Distribution of different tool types did not segregate into plant and animal processing indicating that activities were not relegated to discrete areas within the structure.

Surprisingly, the ground stone artifacts recovered from the structure floors and associated activity areas were few.

The floral assemblage from the site indi-

cates an economy based on corn agriculture and a focus on weedy annual species and perennials that would have been harvested in the late summer and fall, which fits well with a seasonal occupation during harvest time. Faunal analysis revealed a mixed small and large mammal assemblage that is consistent with a domestic occupation. Slightly higher antelope counts may indicate more of a focus on the grass land or basin habitat. Overall, the assemblage was typical of a subsistence strategy that exploited nearby field species and with a limited focus on longer distance forays into grassland, foothill, and montane settings.

### *The Coalition Period*

The abandonment and filling of Structure 76 with domestic and construction debris and the interment of two individuals in the midden marks the beginning of a rapid shift in architecture, material culture, subsistence organization, and potentially cultural affiliation of the LA 6169 residents. The architectural shift took the form of surface room blocks and small seasonal pit rooms in contrast to deep pit structures. Material culture change is primarily observed in the ceramics with the replacement of mineral-painted Kwahe'e Black-on-white with carbon-painted Santa Fe Black-on-white. Subsistence organization change is inferred from the sudden introduction of pit rooms and the change in pit rooms from residential to specialized food processing functions. Finally, the cultural affiliation change is inferred from the combination of traits that represent a sudden and abrupt shift away from the Late Developmental period pattern observed at LA 6169 and from other contemporaneous sites in the Cochiti and Pajarito Plateau areas.

Chronologically, this change occurred within a span of 40 to 50 years or barely two generations from AD 1205 to 1245. The AD 1205 date came from the central hearth in Structure 76. The next date of AD 1225 was an archaeomagnetic date derived from a thermal feature in Structure 16 and it is associated with seasonal residential use of the pit room. These

two dates indicate that in 20 years, more or less, Structure 76 was abandoned, another Late Developmental period structure was occupied with the refuse and building debris from this occupation deposited into Structure 76, along with two human burials. The refuse deposit had pottery types that could be characterized as transitional Kwahe'e to Santa Fe Black-on-white suggesting a change in the source of decorated pottery late in the Late Developmental period. Then Structure 16, a pit room, was excavated and outfitted with thermal and processing pits and a ventilator shaft. However, the decorated pottery was all Santa Fe Black-on-white and there was an immediate shift to anthill sand utility ware that may have been made on the Pajarito Plateau. The frequency of Northern Rio Grande Utility ware dwindles to insignificance indicating a strong relationship with the Pajarito Plateau and a much reduced relationship with sites in the Santa Fe and Tesuque River valleys at a time when small villages consisting of surface room blocks were established in both areas. This apparent connection between LA 6169 site residents remains strong as Structures 15 and 70 are built. Structure 15 archaeomagnetically dates to AD 1235. Structure 10 may have been established at this time as well, but no absolute dates were obtained from the intramural features. Finally, Structure 16 was remodeled around AD 1245 into a mealing room with three bins, an adobe bench or step, and one thermal feature. Rather than residential, its function appears to have been specialized. Structure 16 was the only structure with evidence for specialized activities at LA 6169 during the Coalition period.

It appears that before AD 1300 most of the domestic or specialized use of LA 6169 had ended. The ceramic assemblage was dominated by Santa Fe Black-on-white throughout the AD 1200s and there is no evidence of the glaze-painted or Biscuit ware pottery that accompanies post-AD 1300 occupations in the Cochiti area (Lange 1968b; Honea 1968). Evidence for post-AD 1300 use comes from Feature 14, a large charcoal-filled thermal feature placed in

the upper fill of Structures 4 and 15. This thermal feature suggests that LA 6169 was used for short periods for hunting and foraging, while the large sites, such as LA 249 and LA 6455, housed the full range of domestic, subsistence, and ritual activities.

Pit rooms at LA 6169 were consistent in construction methods, size, and intramural features with a few exceptions. Structure outlines were uniformly rectangular; room length ranges from 2.55 to 3.1 m and room width from 2.0 to 2.75 m or narrow enough to span with a simple roof. None of the structures had post-holes in the floor suggesting that roofing timbers were laid across the structure's short axis. Wood or reed-impressed adobe was not recovered from any structure, although adobe clods were abundant in all four structures. The abundant adobe was interpreted as remaining from a superstructure that might have extended structure heights by 40 to 50 cm to accommodate a standing individual. With exception of Structure 16, intramural features were limited to a hearth, an ash pit (in the case of Structure 70), and assorted small pits. Structure 16 started with this domestic feature suite, but was transformed into a mealing room prior to abandonment. Pit rooms were common at Cochiti area sites dating between AD 1200 and 1450. Isolated or a few clustered pit rooms early in the sequence give rise to linear configurations as exemplified by LA 6455. The linear pit room blocks at LA 6455 may precede the large room block construction and may represent initial settlement near prime agricultural lands.

Subsistence information recovered from the pit rooms was limited. Pollen and ethnobotanical studies revealed some potential corn production and consumption, but limited evidence of corn processing and grinding. Wild plant species were mixed with domesticated species showing a mixed subsistence pattern. Structure 70 yielded a wide range of ethnobotanical remains suggesting a broad-based field and riparian gathering strategy. However, the other pit rooms had less evidence of broad-based foraging, indicating that they were occupied for shorter periods during

the growing season. Structure 70 yielded turkey in addition to the other small and large mammals that typically were recovered in low frequencies. Chipped and ground stone artifacts from pit rooms were recovered in low frequencies from contexts that could be directly related to pit room occupation. Instead, the overall pattern of flaked and ground stone use is mixed with an emphasis on locally available materials, production of expedient scraping and cutting tools, and limited production of formal tools for hunting and meat processing.


During the Coalition period three types of structures were built and occupied in the Cochiti area and nearby Pajarito Plateau: isolated pit or surface rooms, small room block with or without a kiva, and single room residences (Biella 1979:110–114). LA 6169 had structures from two categories: pit rooms and a small surface room block without a kiva. Both structure types reflect small-scale settlement, perhaps at the commensal level. Typically, surface rooms are interpreted as supporting a more permanent occupation than the small pit rooms. Whether the occupations were longer lasting for the former can be debated. What is clear is that surface room blocks had more capacity to house people or products. The small pit rooms with their single hearths and lack of storage really appear to be fieldhouses in the strictest sense. They are sufficient for one or two individuals that had regular access to their more permanent residential village or community. This small scale fieldhouse pattern was new to the Cochiti area in the Coalition period. The previous settlement pattern was exemplified by deep, insulated, and substantial pit structures. Arguably they were seasonal, but they could have housed a family rather than an individual. In this sense, the pit structures are more similar to the room blocks, in terms of capacity and potential. Currently, our knowledge of the Coalition period settlement pattern is that it was small-scale and on the terraces above the Rio Grande. Along the river, where the reservoir is now, the room blocks were larger, and clustered forming communities. The pit rooms on the terraces appear to have functioned more

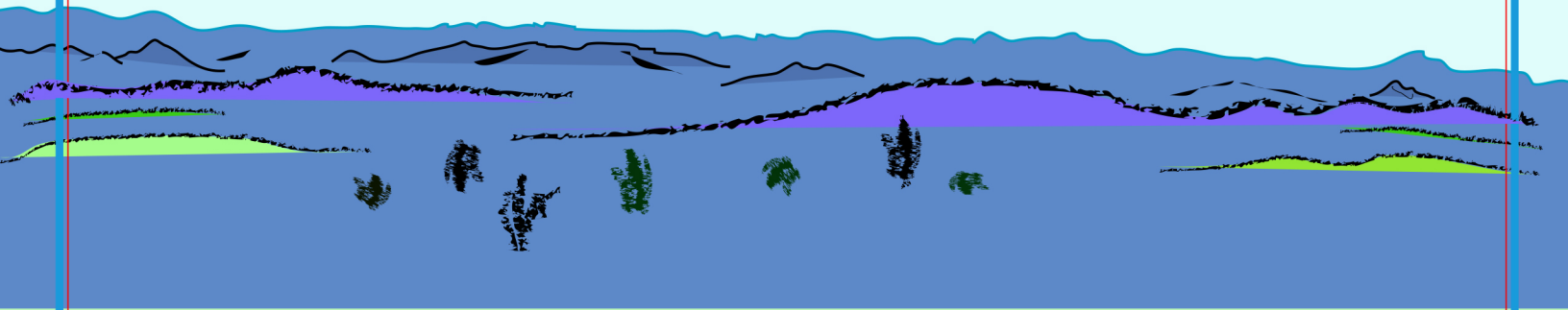
as an extension of the community rather than the community center. This is a settlement pattern that is similar to the 1100 and 1200 pattern in the upper San Juan Basin (Kohler 1992). This change in settlement pattern combined with the rapid change in ceramic technology and acquisition pattern, and the overall architectural pattern, suggests that the Late Developmental period population left and was rapidly replaced by people with close ties to the groups that were rapidly settling the Pajarito Plateau. In other words, the data from LA 6169 support

a migration hypothesis with population replacement very likely rather than integration into existing communities.

Following AD 1250 there appears to be limited use of LA 6169. As mentioned before, glaze-painted and biscuit wares are rare. One thermal feature (Feature 14) was built into the upper fill of Structures 4 and 15. A depression may have remained that would have provided shelter for the fire and for overnight site users. By AD 1300, it appears that the settlement focus has shifted upstream to LA 249, LA 70, and LA 6455.



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AN 385 Volume 2  
2012



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